

Mobility Element

Newark Master Plan

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Prepared for:
City of Newark, New Jersey



In Collaboration with:



Prepared by:
Sam Schwartz Engineering



in conjunction with:
PB Americas, Inc.
Vanasse Hangen Brustlin, Inc.
Technique Corporation

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Executive Summary

Newark, the largest city in New Jersey, is a major transportation hub served by a multimodal transportation system. This public and private transportation system consists of rail and bus transit, roadways, parking, rail freight, and seaport and airport facilities serving local, regional, national and international markets. This system is perhaps Newark's greatest asset and is a key component of the city's future growth and prosperity.

This Mobility Element was prepared for the 2012 revision to the Newark Master Plan. It is one of a number of physical elements that comprise the Plan. The Mobility Element describes the City's existing transportation system, issues and needs and prepares the city for growth through 2035. The stated goal of the Mobility Element is to:

“Ensure that Newark’s transportation system and future improvements meet the needs of its residents, businesses and visitors; while promoting local, regional, global connectivity, multi-modal travel choices, economic development, and safe and healthy neighborhoods.”

This goal supports the overall goals of the Master Plan and the specific goals of other physical elements of the Plan.

Nine objectives were developed to achieve this goal. The objectives are based on analysis of existing conditions, modeling of future conditions, discussions with City staff and agencies, review of community input, and coordination with the other Master plan Elements' recommendations. Each objective has associated strategies and actions for implementation. An Action Plan provides the specific policies and projects for accomplishing the objectives. Three rounds of community workshops and many focus group meetings conducted for the Master Plan allowed residents and stakeholders an opportunity to provide input into the Mobility Element and to inform its objectives and actions. The objectives are listed in the right column.

The Action Plan identifies the city department lead, the responsible implementing agency, as well as its cost and timeframe for completion. The Action Plan addresses the transportation system's current and future needs and sets the City on its course towards its desired direction, which encourages greater use of transit, promotes local and regional connectivity, provides safe streets for all users, minimizes traffic congestion, and provides adequate transportation infrastructure to accommodate the job producing growth of the sea and air ports.

Objectives

Public Transit

Increase the use of all forms of public transit by residents, commuters, and visitors to/from and within the City

Local Accessibility, Pedestrians, and Bikes

Connect neighborhoods to one another and to the various employment, recreation, entertainment and waterfront destinations within the City

Regional Connectivity

Connect the City outward to the local, regional, and global infrastructure and the opportunities they afford

Traffic Circulation

Adequately accommodate vehicular traffic and minimize congestion along the City streets and the regional roadway system

Safety

Improve the safety of streets and intersections for all users

Freight

Facilitate the movement of freight through the Port Newark/Elizabeth and Newark Liberty International Airport areas via enhanced freight access and industrial land use policies which support the continued economic growth of these vital assets

Parking

Balance the parking needs and desires of various users (residents, students, workforce, and downtown)

Land Use Coordination

Coordinate land use policy and transportation planning

Air Travel

Facilitate the movement of passengers through Newark Liberty International Airport via enhanced transit access and improvements in roadway circulation

Introduction

1

The Newark Master Plan

The Mobility Element is one of a number of both required and optional elements that comprise the 2012 Newark Master Plan, which builds on the recommendations proposed in the Master Plan Re-Examination Shifting Forward 2025 that was adopted by the City in 2009. The other elements of the 2012 Newark Master Plan are the following:

- Land Use
- Business and Industry
- Housing
- Parks and Natural Resources
- Utilities and Infrastructure
- Community, Cultural and Educational resources
- Historic Resources
- Urban Design

The Mobility Element, like the other elements, sets forth specific goals, objectives, strategies, and actions which combine to achieve the Master Plan’s three overarching goals:

1.Economic Development

2.Healthy and Safe Neighborhoods

3.City of Choice

Although the Mobility Element affects all the elements of the Master Plan, it is most important to the Land Use and Business and Industry elements, which rely on the transportation network for access and efficient movement of people and goods.

Mobility Element Goal

With the above Master Plan goals in mind, the Goal of the Mobility Element is as follows:

“Ensure that Newark’s transportation system and future improvements meet the needs of its residents, businesses, and visitors; while promoting local, regional, global connectivity, multi-modal travel choices, economic development, and safe and healthy neighborhoods.”

The Mobility Element focuses on all modes of transportation within the City of Newark and provides a comprehensive list of the actions needed to continue to move forward and accomplish the overall goals. It must propose and endorse transportation investment and policy strategies that sustain and foster economic development and quality of life activities and which provide efficient access to these opportunities.

New Jersey Municipal Land Use Law

The Master Plan and Mobility Element are being prepared according to New Jersey’s Municipal Land Use Law (MLUL), which requires municipalities to update and adopt a new master plan every 10 years. The Newark Planning Board is responsible for adopting the new Master Plan. As a legally recognized policy document, it will serve as a tool for budgeting, managing, and implementing the Master Plan and Mobility Element, objectives, strategies, and actions.

Public
Outreach

2

Public Outreach

Public outreach was an important component of the Newark Master Plan. The public outreach process allowed residents, business owners and stakeholders in the City to be actively involved and provide input for all aspects of the Plan, including the Mobility Element. A significant public outreach program was implemented and involved multiple community workshops.

Focus Groups

As part of the Newark Master Plan effort a series of public and private stakeholder focus group meetings were held from November 14 through 17, 2011. Focus group participants represented a diverse cross-section of: business owners and developers, economic development and business organizations, affordable housing advocates, universities, port and business development organizations, art and cultural institutions, and recreational and open space advocates.

Public Workshops

In 2011, an extensive series of community workshops were conducted as part of the Newark Master Plan and Mobility Element efforts. Two rounds of community workshops were held (July 2011 and December 2011) to engage the public.

Community Workshops Round #1

The first round of community workshops was held in each ward of the City. These workshops were held early in the planning process to gain input and to understand the concerns of each of the city wards. The first round of community workshops was held between July 12 and July 27, 2011 throughout the city as follows:

- North and South Ironbound, July 12, 2011
- Mount Pleasant/Lower Broadway & Seventh Ave, July 13, 2011
- Upper & Lower Roseville, July 14, 2011
- Forest Hill & North Broadway, July 18, 2011
- Weequahic & Dayton, July 19, 2011
- Fairmount, Upper Clinton Hill & West Side, July 20, 2011
- Springfield / Belmont, Lincoln Park, Lower Clinton Hill & South Broad Street, July 21, 2011
- Upper & Lower Vailsburg, Ivy Hill, July 26, 2011
- Central Business District & University Heights, July 27, 2011

The first round of community workshops engaged over 330 people. Issues and topics of discussion at these meetings relevant to the Mobility Element can be grouped as follows:

- Local bus and light rail connections, service, and amenities.
- Pedestrian safety, security, crosswalks, etc. (in general and at light rail stations).
- Connectivity and accessibility to transit and other neighborhoods for pedestrians and bicycles.
- High vehicle speeds, truck traffic, and dangerous intersections on neighborhood streets.
- Congestion on local streets and downtown.
- Parking availability in commercial areas, neighborhoods, and downtown.

Community Workshops Round #2

The second round of Master Plan community workshops was a two-day public work session held on Wednesday, December 7, 2011 and Saturday, December 10, 2011. This two-day public work session was held at Central High School and provided a summary of the information gathered at the first round of community workshops as well as the project status and look ahead to the ideas and recommendations that were being developed. Issues and topics of discussion at the December meetings relevant to the Mobility Element were nearly identical to those identified in the first round, as described above.

Community Workshops Round #3

The third round of Master Plan community workshops was held in several areas of the city on multiple days in May and June of 2012. These workshops provided a summary of the project status as well as an opportunity for each neighborhood to provide final review and feedback of the Draft Master Plan. Comments were received on the Draft Mobility Element Objectives, Strategies and Actions, and have been considered and incorporated in the Final Mobility Element.

Mobility Overview

3

Background and History

The City of Newark serves as a major transportation hub for the movement of people and goods by a variety of modes and facilities. The transportation system consists of rail and bus transit, roadways, parking, rail freight, and seaport and airport passenger and freight facilities serving local, regional, national and international markets. It has been estimated that approximately one-third of the area of the city is dedicated to transportation facilities. The system provides for extraordinary connectivity and accessibility and is perhaps the city's greatest asset.

The current transportation system in Newark reflects the city's origins in the 17th Century and the advances in transportation technology over the next three centuries. Today's center of Newark, at the intersection of Broad and Market Streets, can trace its beginnings to the two main thoroughfares forming the axis around which the first settlement was subdivided. The 18th Century saw links developing to other towns. Ferry Street connected Newark to the east via ferries across the Passaic, Hackensack, and ultimately, Hudson rivers. Other roads radiating from the core connected Newark with towns to the north, south, and west, eventually becoming the major avenues leading to the downtown core. In the early 19th Century, the Morris Canal was built through Newark to move goods into the developing market, but that was soon replaced by the railroad. Passenger rail was also introduced in the latter half of the century, with Newark serving as a major stop along the Philadelphia to New York line.

The 20th Century produced important components of the system including the streetcars and Newark City Subway (which used the right of way of the old Morris Canal), the major train station built by the Pennsylvania Railroad, and the inter-urban Hudson & Manhattan RR (the modern-day PATH). The 20th Century also gave rise to the internal combustion engine and the automobile era. The Holland Tunnel and Pulaski Skyway were built, now allowing direct vehicular access between New York City and Newark. After World War II, a rapid growth of car ownership and construction of highways and interstates radically changed the dynamics of the transportation system and provided people with the mobility that accelerated the outward expansion of the city's population to the suburbs. The streetcar lines were converted to bus lines. At the end of the 20th Century, the role of Newark Liberty International Airport and Port Newark became ever increasing key components of the system and are expected to keep on growing. This Mobility Element will set the stage for the first half of the 21st Century.

Transportation Governance

The multi-modal transportation system serving Newark is critical to the city's economic vitality and welfare of its residents. The system is operated and maintained by a number of agencies and private operators including the City of Newark, Essex County, New Jersey Department of Transportation (NJDOT) NJ TRANSIT, Port Authority of New York and New Jersey (PANYNJ), Amtrak, and private rail and bus companies.

The City of Newark currently has the following responsibilities under its purview related to transportation planning and engineering activities within the city. The City's Department of Engineering's Traffic and Signals Division provides planning, development, construction management, replacement, and operation of the city's roadway infrastructure. The City's Department of Economic and Housing Development's Planning division provides guidance to the growth and preservation of the city through regulation and analysis of: land use, economic and social conditions, and transportation, infrastructure, and environmental systems.

Newark does not have a department or individual within city government with overall responsibility for the coordination of the city's transportation policy, planning, engineering, and external relations with the operating agencies, business community and residents.

Demographic Profile and Use of the Transportation System

Newark, with a 2010 population of 277,140¹, is New Jersey's largest city. At 24.19 square miles, Newark is also a fairly dense city, with 11,458.2 persons per square mile². Newark has 109,520 housing units³, and is home to over 16,000 business firms⁴.

Newark reached its peak population in 1960 with 405,220 people, and between 1960 and 2000 the City lost 33 percent of its population. Between 2000 and 2009, Newark's population grew by 1.7 percent, adding approximately 4,600 people⁵. In 2010, the median income for a household in Newark was \$32,043, and the per capita income was \$17,367. In 2000, the median income for a household in Newark was \$26,644. Table 1 shows that compared to Essex County and the state of New Jersey, Newark had a considerably lower median household income and per capita income, both in 2000 and 2010.

In 2000, over 44 percent of households in Newark had no access to a vehicle. By 2010, the percentage of car-free households in Newark had fallen to 39 percent, but this is still a significant portion of the population. Newark has the third highest percentage of car-free households in New Jersey, following Atlantic City and Union City. As a result, as of 2010, over half of Newark's residents choose to travel to work by modes other than driving alone: 27 percent of Newark residents use transit to access work, 18 percent carpool⁶, and 8 percent walk⁷. It is worth noting that Newark's percentage of carpool usage is one of the highest in the state. Newark's percentage of workers who walk to work is also relatively high.

Between 2000 and 2010, transit share among both Newark's residents and Newark's workforce increased slightly, from 26 percent to 27 percent and from 18 percent to 20 percent, respectively. Among those who use transit, the majority are bus riders, with residents at 75 percent and workers at 64 percent.

	Median Household Income		Per Capita Income	
	2000	2010	2000	2010
Newark	\$26,644	\$32,043	\$13,009	\$17,367
Essex County	\$44,306	\$52,394	\$24,943	\$29,674
New Jersey	\$54,820	\$67,681	\$27,006	\$33,555

Table 1 - Income in Newark, Essex County, & New Jersey, 2000 & 2010

All Modes				
	Newark 2000		Newark 2010	
	Workers*	Residents	Workers*	Residents
Auto	78%	64%	72%	61%
Transit	18%	26%	20%	27%
Walk / Bike	4%	8%	5%	8%
Other	<1%	2%	3%	3%

Transit Modes				
	Newark 2000		Newark 2010	
	Workers*	Residents	Workers*	Residents
Railroad	21%	7%	22%	18%
Subway	6%	6%	14%	7%
Bus	73%	88%	64%	75%

Table 2 - Modes of Travel to Work, 2000 & 2010

Source: U.S. Bureau of the Census, 2000 U.S. Census & 2010 U.S. Census

* Includes both residents and non-residents of Newark

1. US Census 2010

2. US Census 2010

3. US Census 2010

4. US Census American Community Survey 2005 - 2009

5. US Census American Community Survey 2005 - 2009

6. NJ TRANSIT Forecasting & Research Presentation, January 30, 2007.

7. US Census American Community Survey 2005 - 2009

System Usage Trends

Commutation to Newark

Although most of New Jersey's rail lines and busiest bus routes run through Newark, only 20 percent of people who work in Newark use transit to travel to work citywide. In addition, the number and percentage of people using transit to commute to work in Downtown Newark has dramatically decreased over time. Between 1970 and 2000, Downtown Newark lost approximately 20,000 jobs.

- 1970 – 70,000 workers in the Downtown – 50% arrived via transit
- 2000 – 52,000 workers in the Downtown – 26% arrived via transit

In those 30 years, a major transformation in commuting patterns occurred. During this period, despite the robust local and regional transit infrastructure, Newark saw a 50 percent decline in the use of transit as a means for commuting Downtown, and an almost 50 percent increase in auto usage (see Figure 1). This trend is due to a convergence of factors. The Mobility Element and Master Plan will strive to reverse this trend in the future.

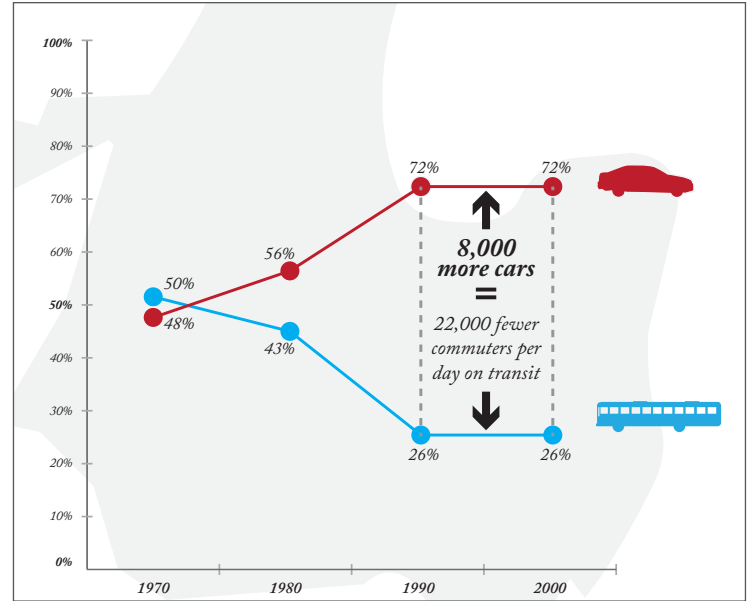


Figure 1 - Commuting to Downtown Newark, Modal Shift 1970-2000

Source: NJ TRANSIT Newark 2000 Demographic & Travel Pattern Information, Jan 2007

Figure 2 shows the comparative modes of travel to Downtown Newark for the year 2000. Of those people who work in Downtown Newark, very few from suburban and western Essex County arrive by transit, with close to 85 percent arriving by car.

While there was a substantial decline in rail and bus ridership for those who worked in Downtown Newark between 1970 and 2000, system-wide rail ridership has increased on all NJ TRANSIT lines since 1990, which was the earliest date for which data was available. This increase may be partially due to a high transit mode share for workers commuting through Newark to New York City.

The University Heights area attracts approximately 12,000 faculty and staff and 31,000 students, but no sustained effort has been undertaken to encourage transit use in the area. Parking is plentiful. The airport/port area is a major job center and is growing, but transit service needs to be expanded, particularly during overnight hours.

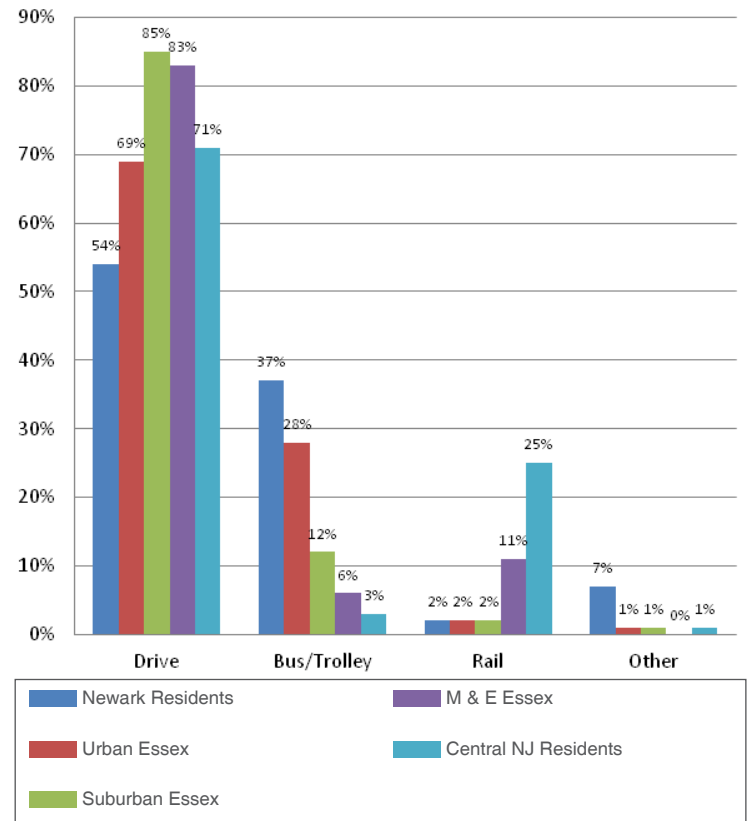


Figure 2 - Downtown Newark Workers: Comparative Modes of Transportation, 2000

Source: NJ TRANSIT Downtown Worker Demographic & Other Information, Jan 2007

Commutation from Newark

In 2000, only 41 percent of workers who lived in Newark worked in Newark. The rest—approximately 51,000 people—worked in suburbs or nearby towns, except for 6 percent who worked in New York City. Figure 3 shows where Newark's resident labor force jobs are located. Major concentrations of Newark residents' workplaces are found in the older suburbs bordering Newark to the west and north, some of which are ostensibly accessible by transit but, in reality, are not always served well by the bus and rail schedules, particularly during the work times for these employees. Many jobs are also in low density areas.

Although there has been a dramatic decrease in the use of transit for access to Downtown between 1970 and 2000, between 2000 and 2010 there has been a trend towards greater transit usage for Newark workers and residents. The census data shows an increase in transit usage and a decrease in automobile commutation during this period and NJ TRANSIT data shows an overall increase in light rail transit and rail ridership.

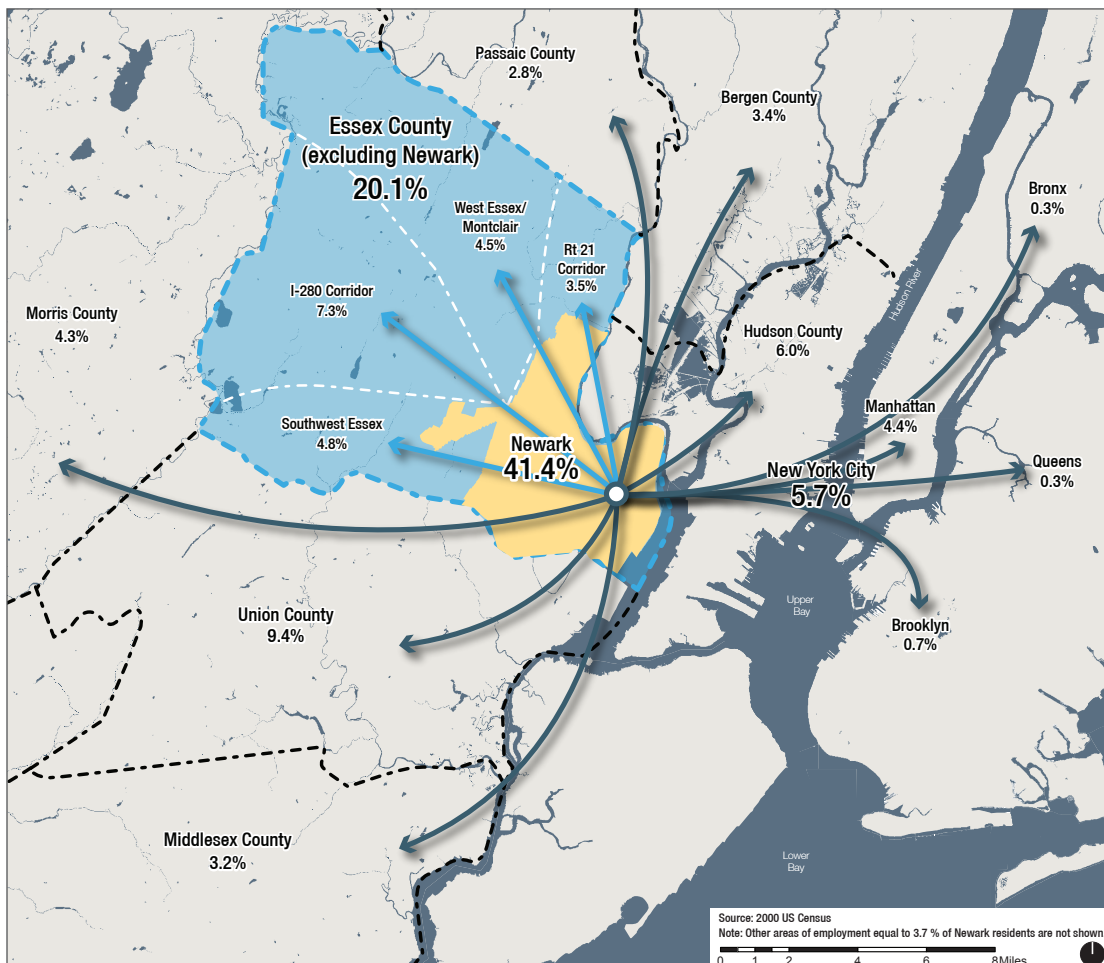


Figure 3 - Newark Resident Workforce Location of Jobs

Source: US Census Data 2000

System Description

4

Transit

Rail Transit

The City of Newark is served by the following NJ TRANSIT rail lines: the Northeast Corridor Line, the North Jersey Coast Line, the Raritan Valley Line, the Morris and Essex Lines, and the Montclair-Boonton Line. Newark is also served by Newark Light Rail, PATH, and Amtrak. The Newark Liberty International Airport AirTrain connects the Northeast Corridor with airport terminals. Newark boasts dozens of local stations and three major rail stations: Newark Penn Station, Newark Broad Street Station, and the Newark Liberty International Airport (EWR) Station. Figure 4 shows the rail transit system serving Newark and the average weekday ridership for each line, as well as ridership at each station.

Following is a description of each rail line and the stations they serve.

AMTRAK

Amtrak is a federally-owned railroad that provides intercity passenger service to Newark's Penn Station and Newark Liberty International Airport Station along the Northeast Corridor line. The Northeast Corridor line, which is Amtrak's most heavily used service, runs between Washington, D.C. and Boston and serves other major East Coast cities such as New Haven, New York, Trenton, Philadelphia, and Baltimore. Connections are also available to long-distance trains to more remote cities, like New Orleans, Chicago, and Miami. Trains operate throughout the day with the heaviest service between New York and Washington DC. 174 Amtrak trains serve Newark Penn Station each weekday, moving more than 650,000 passengers in the 2010 fiscal year.

NJ TRANSIT Rail

Several NJ TRANSIT commuter rail lines serve Newark: the Northeast Corridor, North Jersey Coast, Raritan Valley, Morris and Essex, and Montclair Boonton lines. These lines primarily serve commuters to Newark and New York City, and they also enable "reverse commuting" from the cities to outlying suburban locations. The following is a brief summary of each line.

NORTHEAST CORRIDOR

This NJ TRANSIT service runs in a southwestern/northeastern direction through the center of Newark, linking it to Trenton and New York City. On weekdays, 187 trains per day depart from Newark Penn Station, and 149 trains serve the EWR station. The line has more than 115,000 daily NJ TRANSIT passenger trips. As noted above, Amtrak also operates intercity service along the Northeast Corridor.

NORTH JERSEY COAST LINE

The North Jersey Coast Line runs north-south between Hoboken and New York City on the north end, and Bay Head in Ocean County, on the south end. The North Jersey Coast Line serves both EWR and Newark Penn Station. On weekdays, 87 trains per day serve Penn Station and 65 trains serve the EWR station. The line carries approximately 28,000 daily passenger trips.

RARITAN VALLEY LINE

The Raritan Valley Line runs east-west between High Bridge in Hunterdon County and Newark Penn Station. Those wishing to access New York City can transfer in Newark to the Northeast Corridor or the PATH. On weekdays, 53 trains per day depart from Penn Station. The line carries approximately 21,500 daily passenger trips.

MORRIS AND ESSEX LINES

The Morristown Line is the main line. It runs between Hackettstown in Warren County and either Hoboken or New York Penn Station, via Morristown and Newark's Broad Street Station. The Gladstone Branch runs from Gladstone in Somerset County to Hoboken or New York Penn Station via Summit and Newark Broad Street Station. On weekdays, 210 trains per day depart from Broad Street Station. The line has approximately 53,000 daily passenger trips.

MONTCLAIR-BOONTON LINE

This line runs between Hackettstown and New York City via Montclair and the Broad Street Station. On weekdays, 78 trains per day depart from Broad Street. The line carries approximately 15,000 daily passenger trips.

Newark is also served by the following fixed rail systems:

PATH

Port Authority Trans Hudson (PATH), a wholly owned subsidiary of the Port Authority of New York & New Jersey, is a heavy rail rapid transit service, that comprises four weekday routes handling 250,000 passenger trips per day. Service operates between Newark Penn Station and the World Trade Center in New York City, with intermediate stops in Harrison and Jersey City. Connection to the 33rd Street Station in New York City is available via a transfer at Journal Square in Jersey City. Weekend service is also available to and from Newark. Trains operate 24 hours with varying headways, which are as frequent as every 5 minutes during the weekday peak hours.

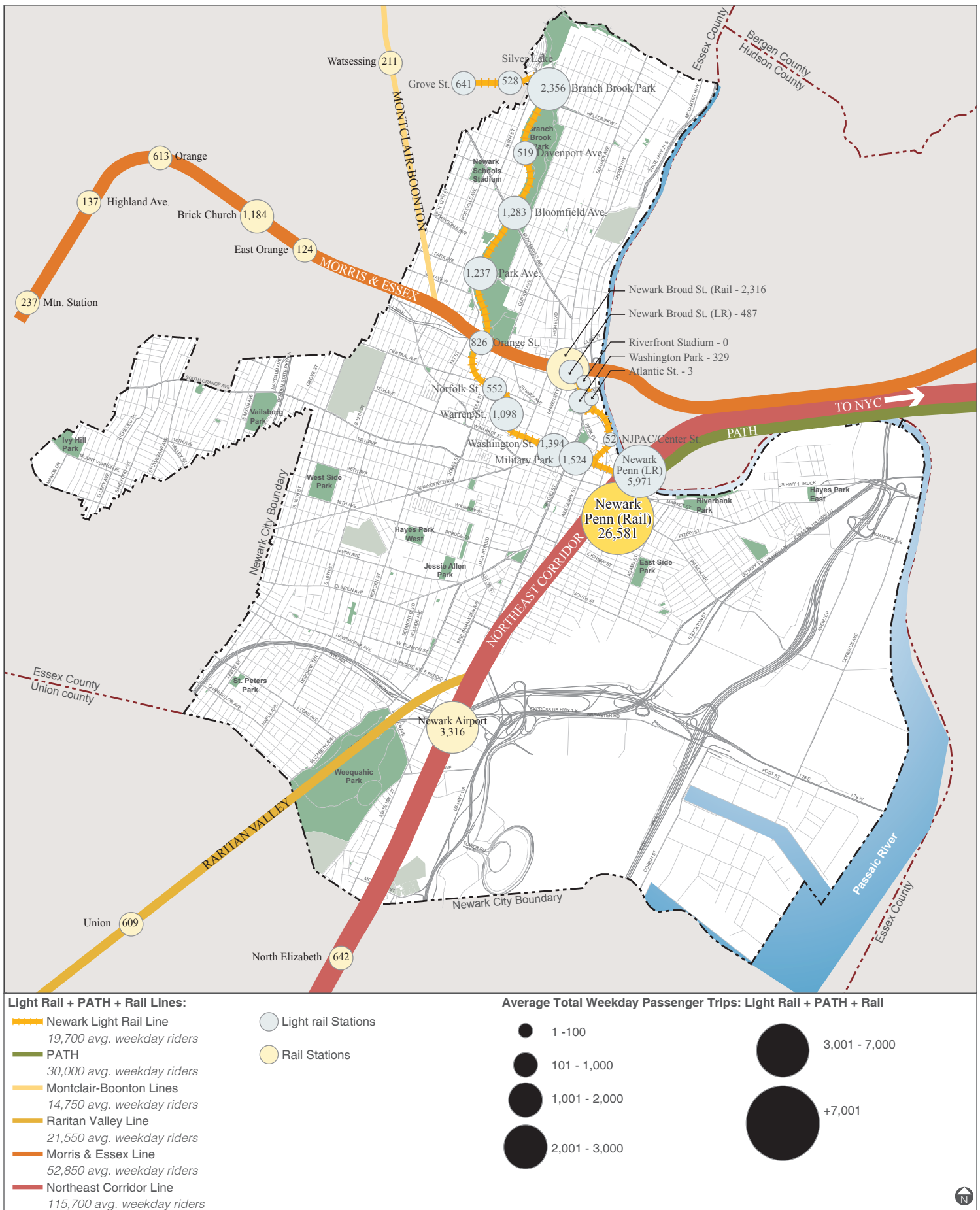


Figure 4 - Rail Transit System and Ridership, 2011

Source: NJ Transit

PATH has recently seen an increase in ridership. Weekday passenger trips originating in Newark averaged 31,159 in 2011, up from 29,901 in 2010. Weekend trips originating in Newark were also higher in 2011 than in 2010. Total PATH ridership in 2011 was 76,555,644, up from 73,911,746 in 2010.

The extension of PATH to Newark Liberty International Airport has been studied a number of times over the past 30 years. This would provide a one-seat ride from Lower Manhattan to the Airport. Currently, there is interest from the Lower Manhattan business community to pursue further study of an airport extension.

Newark Light Rail

NJ TRANSIT’s Newark Light Rail system has two components: the Newark Light Rail (formerly the Newark City Subway) and the Broad Street Extension. The system has a total of 17 stations, 15 of which are located in the city of Newark (see Figure 5). Both branches begin at Newark Penn Station, at lower-level platforms. The Newark Light Rail runs north-south for 4.3 miles to the Grove Street Station in Bloomfield, mostly along the right of way of the old Morris Canal. The line serves Downtown Newark, the University Heights district and outlying Newark residential neighborhoods, as well as several suburban towns north and west of Newark. The Broad Street Extension runs from Penn Station to Broad Street Station. It opened in July 2006, and is a one-mile, six-station light rail line that runs mostly at street level. According to the NJ TRANSIT 2008 Light Rail Survey, approximately 50 percent of light rail riders reached their light rail station by walking.

Newark Light Rail uses modern light rail vehicles, and most of the system operates above ground, except for the underground portion east of the Norfolk Street Station. In 2002, NJ TRANSIT completed a project called the “Bloomfield Extension” to extend the line to Belleville and Bloomfield, reconstruct stations, upgrade tracks, and introduce modern light rail vehicles. New stations were added at Silver Lake and Grove Street, and the Heller Parkway and Franklin Avenue stations in Newark were combined into a new Branch Brook Park Station. The system provides frequent weekday peak hour service and also runs on weekends. In 2010, off-peak weekday service on the Broad Street line was reduced to 30 minute headways. The downtown underground station one-way fare is \$0.70 and the above ground stations, including Broad Street, one-way fare is \$1.50. Average weekday ridership on the system is approximately 20,000. According to NJ TRANSIT, less than half the total car capacity is utilized during the weekday morning peak period.

Light Rail Stations (serving Newark)	
Newark Light Rail (Branch Brook)	Broad Street Extension
Newark Penn Station	Newark Penn Station
Military Park	NJ Performing Arts Center (NJPAC)
Washington Street	Atlantic Street
Warren Street	Washington Park
Norfolk Street	Riverfront Stadium
Orange Street	Broad Street Station
Park Avenue	
Bloomfield Avenue	
Davenport Avenue	
Branch Brook Park	
Silver Lake (Belleville)	
Grove Street (Bloomfield)	

While some of the Newark Light Rail stations are new and easily accessible, others are aging, in poor condition, and/or in need of rehabilitation. NJ TRANSIT recently awarded a \$5.2M contract for improvements to make Newark Light Rail’s Bloomfield Avenue Station accessible to customers with disabilities and more convenient for all customers. Improvements include raising and extending the two existing station platforms to enhance level boarding for customers who use mobility devices, installing elevators and a pedestrian grade crossing, constructing street-level canopies to protect customers from the elements, and upgrading lighting and customer communication systems.

Newark Liberty International Airport AirTrain

Newark Liberty International Airport AirTrain is a monorail service for airport patrons that runs between all airport terminals, parking lots, and the Newark Liberty International Airport (EWR) Station on the Northeast Corridor. Trains run every few minutes from 5 AM to midnight and every 15 minutes between midnight and 5 AM. On Sundays, the train runs approximately every 15 minutes between 7 AM and midnight. Overnight, the AirTrain operates as a shuttle service, which requires a transfer between some origins and destinations. The service carried over 1.9 million passengers transferring from NJ TRANSIT in 2010, in addition to other intra-airport trips.

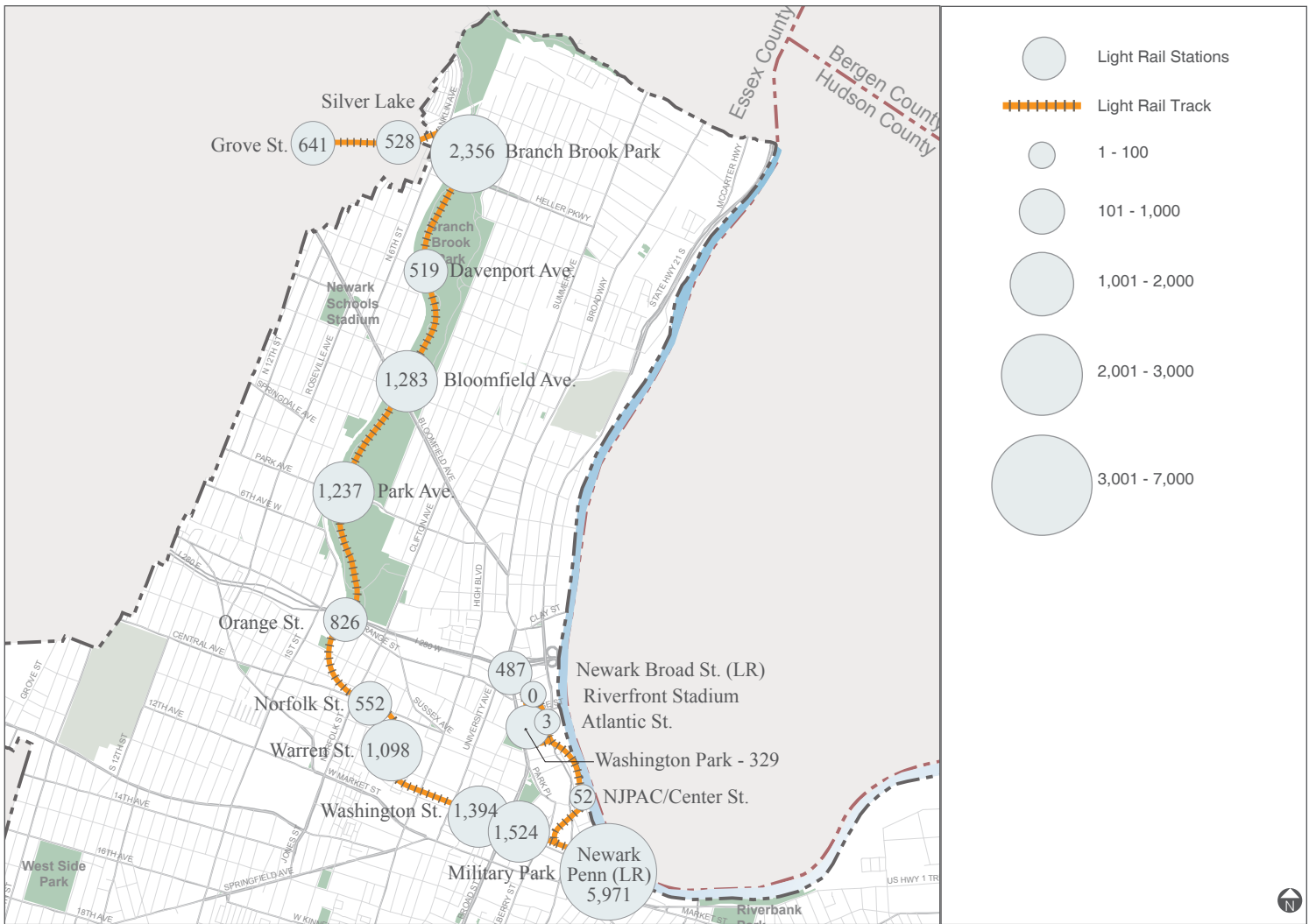


Figure 5 - Average Weekday Passenger Trips - Newark Light Rail System, 2010

Source: NJ Transit

Station Facilities

In addition to the above-listed stations on the Newark Light Rail system, the following three major stations serve the city:

NEWARK PENN STATION

Newark Penn Station is the gateway to Newark and is located along the Northeast Corridor rail line in Newark's Downtown commercial office district. It is an important multi-modal transportation hub served by Amtrak, NJ TRANSIT's Northeast Corridor, North Jersey Coast, and Raritan Valley Line, PATH, and Newark Light Rail. It is also served by many local, regional, and national bus routes operated by NJ TRANSIT, Greyhound, and other private operators. The station has eight heavy rail tracks; seven tracks are on one level, and one track for PATH arrivals is on an upper level. The Newark Light Rail tracks are located underground at the lower level of the station. The station itself has no official rail commuter parking, but several private parking facilities are nearby. The average weekday passenger boardings (arrivals linked with departures) for NJ TRANSIT trains at Newark

Penn Station are 26,449 on 327 weekday trains. Total Amtrak annual ridership at Newark Penn Station is over 650,000 in the 2010 fiscal year, making it by far Amtrak's most active station in New Jersey, with the top trip pair cities being Washington and Philadelphia. Nearly 6,500 Light Rail boardings took place and average PATH weekday boardings were 31,159 in 2011 at Newark Penn Station.

BROAD STREET STATION

Broad Street Station is a Downtown gateway for commuter rail passengers using NJ TRANSIT's Morris and Essex Line and Montclair Boonton Line. It is located approximately one mile north of Newark Penn Station, in the northern Downtown District. The Broad Street Branch of the Newark Light Rail and several local bus routes connect it to Newark Penn Station. Broad Street Station handles approximately 2,500 weekday passenger boardings on 276 trains. The station has no official rail commuter parking, but there are several private parking areas nearby.

NEWARK LIBERTY INTERNATIONAL AIRPORT STATION

Newark Liberty International Airport (EWR) Station is along the Northeast Corridor and connects to the AirTrain Newark, which allows NJ TRANSIT and Amtrak passengers to connect to the airport. This station has 3,316 NJ TRANSIT passenger boardings per weekday on 212 trains.

A Passenger facility Charge (PFC) restriction has been in place since the formulation of a federally-authorized funding mechanism for certain airport-related improvements, such as construction of the station, the AirTrain and their connecting links. PFC's are federally authorized fees to be used by airports to fund FAA airport improvement projects. The PFC restriction limits the use of the station and the monorail to airline passengers and airport workers. The PFC restriction is a barrier to connecting the station to potential development on adjacent vacant land, to a potential bus transfer station or a peripheral park-and-ride.

TOD/Urban Transit Hub Tax Credit

Newark is one of nine municipalities within New Jersey where developers, owners, or tenants making qualified capital investments are eligible to participate in the New Jersey Economic Development Authority's Urban Transit Hub Tax Credit program. For Newark, this program provides incentive for development within ½ mile of NJ TRANSIT, PATH, and Newark Light Rail stations. Based on the program requirements and the extensive number of transit stations throughout Newark, the city has a large amount of area that is eligible for the program. Figure 6 illustrates the ½ mile radius surrounding each of the City's transit stations. To date, six projects in Newark have been approved for the Urban Transit Hub Tax Credit, including Panasonic and Prudential Financial.

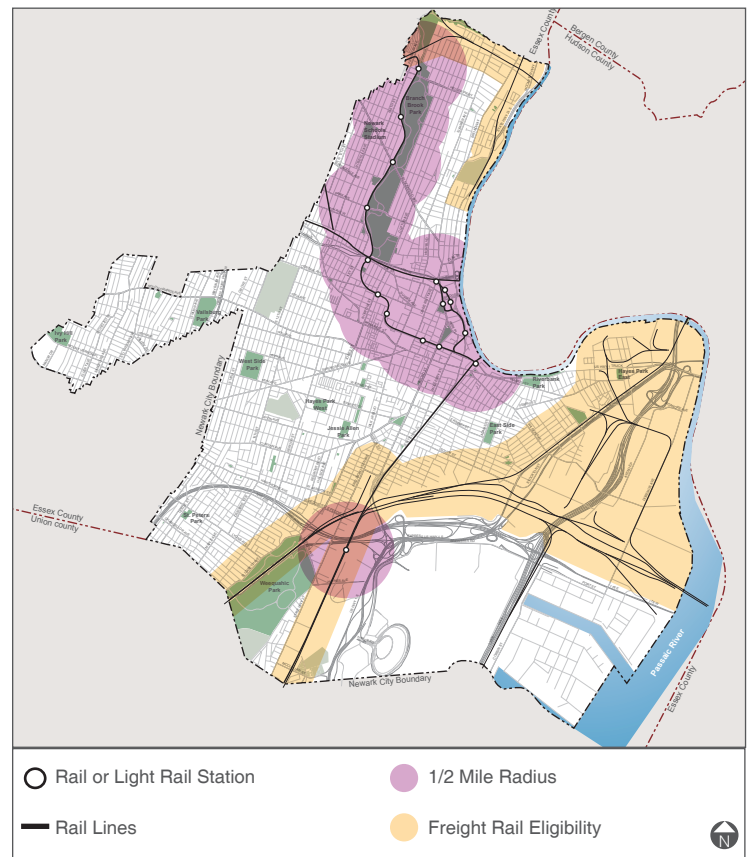


Figure 6 - Urban Transit Hub Program

Rail Transit Ridership Trends

NJ TRANSIT system-wide commuter rail ridership has increased significantly between 1990 and 2011, as shown in Figure 7. Aside from small drops in ridership in the early 1990s, early 2000s, and since 2008—seemingly corresponding to economic downturns—ridership has steadily increased since 1990.

However, as discussed previously, and shown in Figure 8, this overall increase in rail ridership follows a precipitous decline in rail ridership for Newark Downtown workers since 1970, and transit ridership as a whole since 1980. Figure 8 also seems to indicate that between 1990 and 2000, the trend of increased rail ridership has extended to Downtown Newark workers as well, but this increase has been offset by a decrease in bus ridership.

Ridership on the Newark Liberty International Airport AirTrain has also steadily increased over time. The AirTrain opened as an airport circulator in 1996 and was extended to the NJ TRANSIT Newark Liberty International Airport Station in 2001. Since then, ridership increased each year until 2008 and then decreased in 2009 and 2010, as shown in Figure 9. 2001 is the earliest year for which ridership data is currently available.

Ridership on the Newark Light Rail has increased overall from 1990 to 2011. Ridership decreased each year from 1990 to 1994, grew each year until 1998, and then, until 2009, either grew or slightly declined each year, resulting in an overall increase. However, ridership has been falling since 2008, most sharply from 2009 to 2011. This is most likely attributable to economic conditions and the 2010 NJ TRANSIT fare increase. See Figure 10 for annual ridership on the Newark Light Rail.

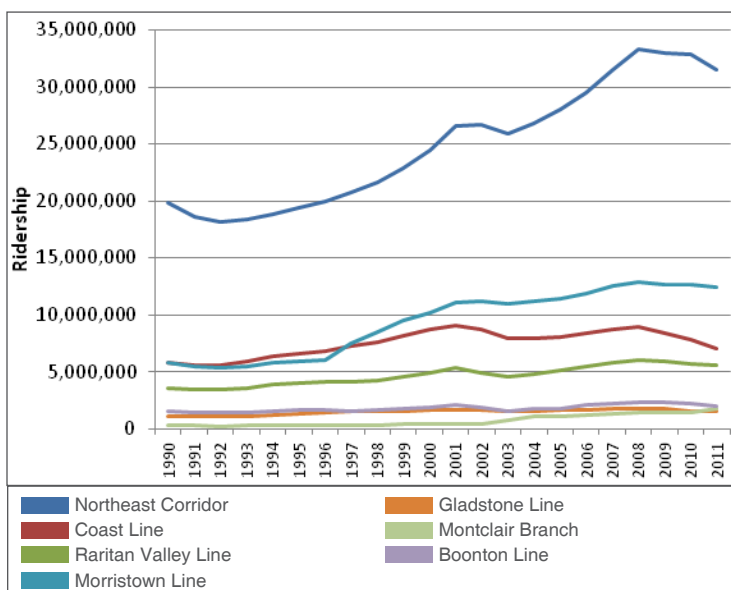


Figure 7 - Total NJ TRANSIT Passenger Rail Annual Ridership by Line

Source: NJ TRANSIT

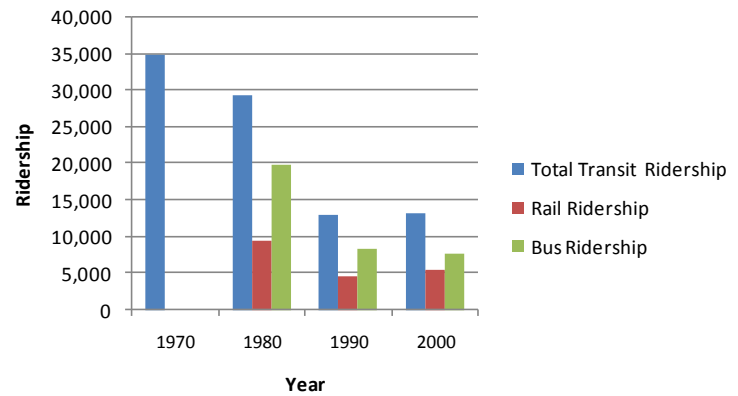


Figure 8 - Historical Transit Ridership for Downtown Newark Workers, 1997-2010

Source: NJ TRANSIT - Downtown Newark Worker Demographics & other information

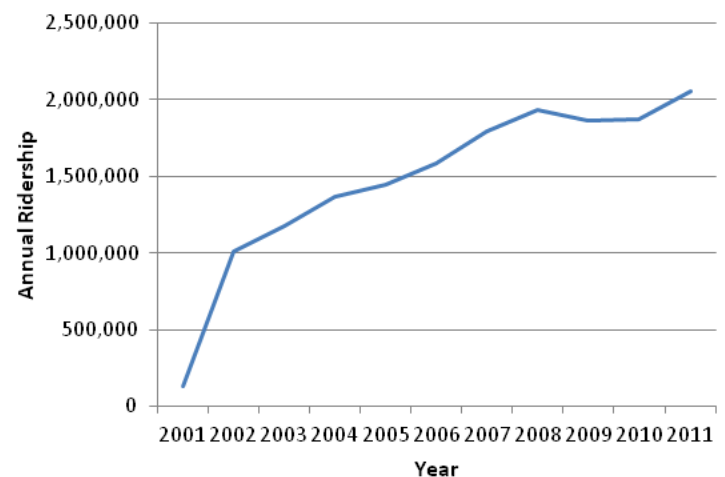


Figure 9 - Ridership on Newark Liberty International Airport AirTrain, 2001-2011

Source: PANYNJ Airport Traffic Report

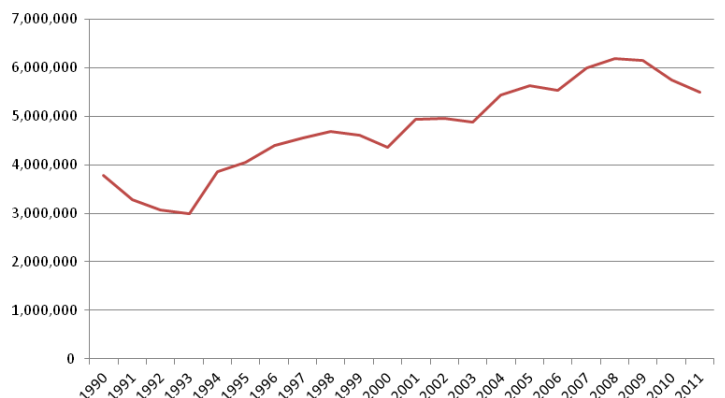


Figure 10 - Annual Ridership for Newark City Subway & Light Rail, 1990-2011

Source: NJ TRANSIT

Station Ridership

NEWARK PENN STATION

Total annual regional rail ridership data for Newark Penn Station is available starting in 1998 (see Figure 11). Following historical ridership patterns on NJ TRANSIT commuter rail lines, Newark Penn Station has experienced a slight increase overall since 1998, with peak ridership occurring in 2001. Ridership decreases were recorded during the exceptional period of 2002 through 2003, when transfers to PATH greatly decreased after the 9/11/01 attack with the closing of the World Trade Center and in the period from 2008 through 2011, likely attributable to the economic recession.

In addition to regional rail traffic, Newark Penn Station attracts PATH riders. 9,132,127 people entered the PATH system at Newark Penn Station in 2011, compared with 8,796,251 in 2010.

NEWARK BROAD STREET STATION

Total annual ridership data for this station is available starting in 1999. While increasing on the whole between 1999 and 2010, ridership has slightly fluctuated over time, as shown in Figure 12. Ridership trends do not appear to track tightly with general NJ TRANSIT commuter rail ridership patterns or those of the Morris and Essex or Montclair-Boonton Lines that stop at this station.

NEWARK LIBERTY INTERNATIONAL AIRPORT STATION

Since opening in 2001, the Newark Liberty International Airport Station (EWR) has seen a significant increase in ridership each year until 2009. Ridership decreased in 2010 and 2011, as shown in Figure 13. The Newark Liberty International Airport Station recorded the highest number of trips in its history in the last quarter of 2011.

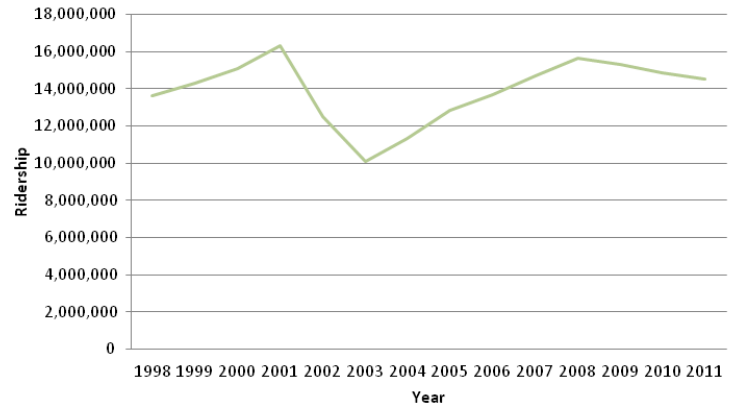


Figure 11 - Annual Ridership at Newark Penn Station, 1998-2011

Source: NJ Transit

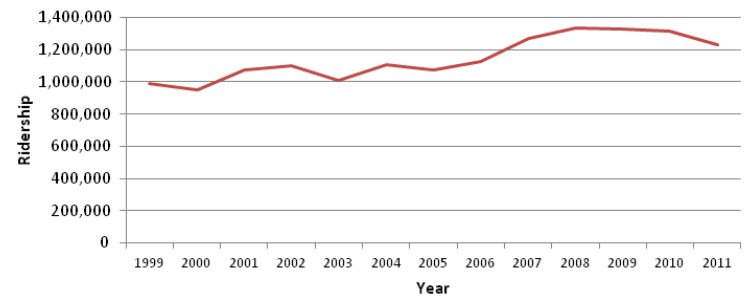


Figure 12 - Annual Ridership at Newark Broad Street Station, 1999-2011

Source: NJ Transit

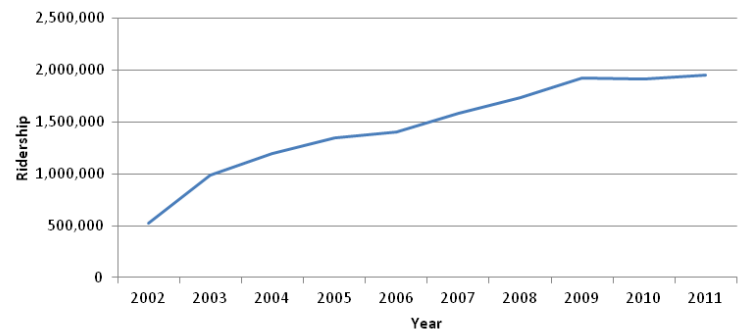


Figure 13 - Annual Ridership at Newark Airport Station, 2002-2011

Source: NJ Transit

Bus Service / Transit

Newark's bus service is a major transportation lifeline of the city. Nearly the entire city falls within one-quarter mile of a bus line. An estimated 800 bus stops are located throughout the city, and the system is well patronized with many routes carrying high ridership. The bus network connects Newark's neighborhoods, businesses, and cultural destinations and provides access to many areas of Newark and surrounding municipalities. Bus service is primarily provided by NJ TRANSIT although several private carriers operate buses within Newark as well. Many bus routes that serve Newark have their starting or ending point at Newark Penn Station, but others travel between key New Jersey transportation hubs and terminals, and still others are interstate buses traveling from or to the Port Authority Bus Terminal in New York City or other out-of-state locations. Supplementing NJ TRANSIT bus service are private bus lines providing service to Newark Liberty International Airport, mostly from New York City via the New Jersey Turnpike.

Table 3 - NJ TRANSIT Bus Routes Serving Newark

Route	Starting Point / Origin	End Point / Destination	2011 Passenger Trips
1	Irvington - Ivy Hill Loop	Jersey City - Exchange Place/Journal Sq. – Newark	4,053,693
5	East Orange - 14th and Main Streets	Newark Penn Station	408,057
11	Wayne - Willowbrook Mall	Newark - City Hall or Penn Station	951,014
13	Irvington - Valley Fair or Bus Terminal	Clifton or Nutley	4,716,379
21	West Orange or Orange	Newark Penn Station	3,122,649
25	Maplewood - Valley Street/Millburn Avenue	Newark - Port Newark	3,879,580
go 25	Irvington Bus Terminal	Newark Penn Station	192,046
27	Irvington Bus Terminal	Newark – Lake Street Loop, Branch Brook Park LR Station or Clifton - Delawanna Rail Station	3,745,439
28	Montclair State University Station/Willowbrook Mall	Newark - City Hall or Penn Station	786,543
go 28	Bloomfield - Rail Station	Newark - EWR Airport	1,105,696
29	Newark – City Hall or Penn Station	West Caldwell - Essex Mall or Parsippany Routes 202 & 46	1,283,969
30	North Arlington Loop	Newark - Lincoln Park or Penn Station	840,789
34	Montclair - Bloomfield	Newark - South Street or Penn Station	2,670,000
37	Irvington - Ivy Hill Loop	Newark - EWR Airport	567,835
39	Irvington – Chancellor Avenue	Newark Penn Station or Washington Park	2,165,903
40	North Arlington Loop	Elizabeth - Jersey Gardens Mall/Port Newark	637,035
41	Orange Rail Station	Newark - Lincoln Park	1,109,913
42	Irvington Bus Terminal	Newark – Washington Park	43,139
43	Jersey City - Exchange Place	Newark - Lincoln Park	41,098
59	Dunellen Rail Station or Cranford - Union County College	Newark - Washington Park	1,619,428
62	Perth Amboy Rail Station or Elizabeth	Newark Penn Station	2,307,946
65	Bridgewater - Bridgewater Commons	Newark - Washington Park	135,191
66	Mountainside	Newark - Washington Park	623,592
67	Toms River - Highland Parkway	Newark Penn Station	339,792
70	Florham Park	Newark Penn Station	1,869,121
71	West Caldwell – Essex Mall, Livingston Mall	Newark Penn Station	706,871
72	Paterson - Broadway Bus Terminal	Newark Penn Station	1,032,231
73	East Hanover – Florham Park or Livingston Mall	Newark Penn Station	936,921
74	Paterson - Broadway Bus Terminal	Newark - Branch Brook Park	1,429,594
75	Wayne - William Paterson University or Butler - Kinnelon Road & Route 23	Newark Penn Station	33,840
76	Hackensack Bus Terminal	Newark Penn Station	1,323,318
78	Newark Penn Station	Secaucus - Harmon Meadow	135,817
79	Parsippany – Troy Hills	Newark Penn Station	128,850
90	Irvington Bus Terminal or Valley Fair	Newark - Branch Brook Park	914,151
92	South Orange Rail Station	Newark - Branch Brook Park	825,706
93	Bloomfield Rail Station	Newark - Branch Brook Park	65,978
94	Linden Rail Station or Union - US 22 and Springfield Road	Bloomfield – Municipal Plaza	3,794,471
96	Newark – Valley Fair	Newark - Bloomfield Park	173,355
99	Hillside - Ramsey Avenue	Newark - Bloomfield Avenue	1,199,165
107	South Orange Rail Station/Newark Ivey Hill Loop	New York - Port Authority Bus Terminal	1,011,622
108	Newark – Colonnade Park	New York - Port Authority Bus Terminal	347,997
308	Jackson - Great Adventure	New York - Port Authority Bus Terminal	127,904
319	Atlantic City Bus Terminal	New York - Port Authority Bus Terminal	319,445
361	Irvington - Ivy Hill Loop	Newark Penn Station	89,422
375	Maplewood Loop	Newark Penn Station	59,623
378	Newark Penn Station	Secaucus - Harmon Meadow	6,541

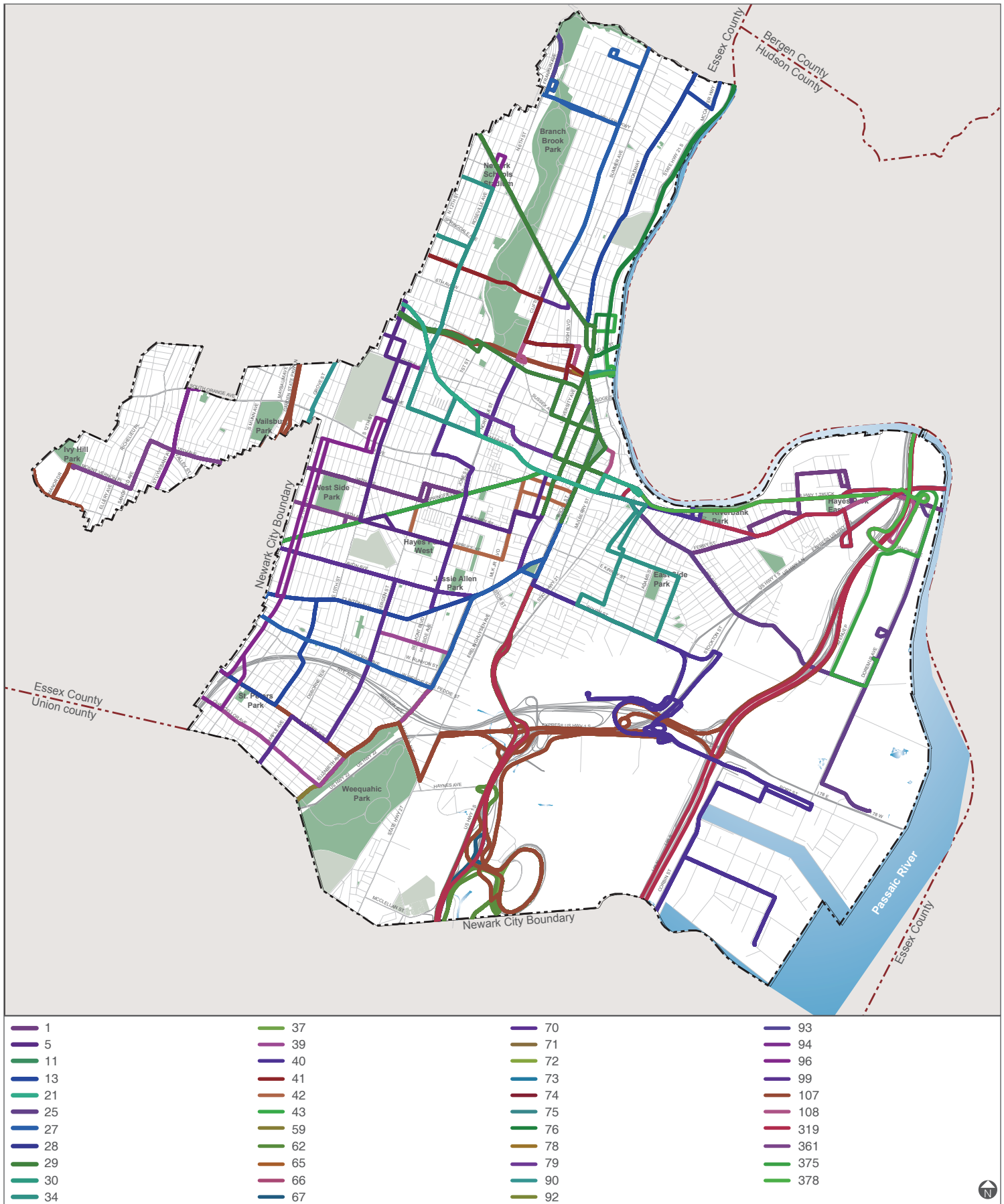


Figure 14 - NJ TRANSIT Bus Routes Serving Newark

NEW JERSEY TRANSIT BUS SERVICE

New Jersey Transit operates 46 local, commuter, and long distance bus routes within Newark and beyond. These routes include two limited stop Bus Rapid Transit-type services branded as the “go Bus.” In 2011, there were nearly 54 million passenger trips on NJ TRANSIT’s routes that serve Newark. NJ TRANSIT bus routes serving Newark are listed in Table 3 and shown in Figure 14.

Annual bus ridership of NJ TRANSIT routes serving Newark is nearly 54 million passengers. Over the last 11 years, bus ridership peaked in 2001 with over 59 million bus passengers as shown in Figure 15. Ridership continued to decline through 2003 and then began to increase and was fairly flat from 2006 until 2009. The drop in ridership since 2009 may be attributable to the recession and fare hikes.

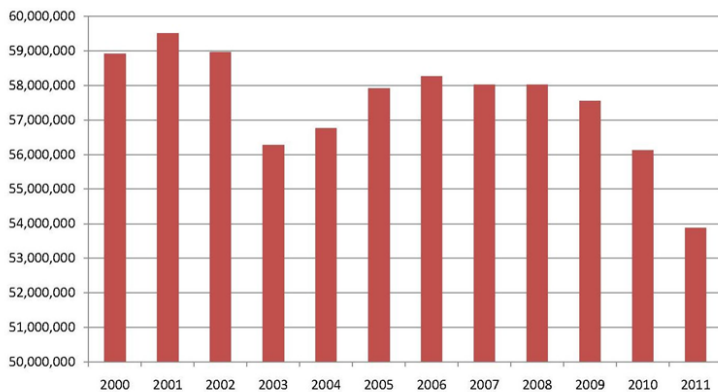


Figure 15 - Annual Bus Ridership in Newark

Source: NJ Transit

Private Carriers

Privately operated local bus services within Newark and to other major destinations are operated by Coach USA under the Orange-Newark-Elizabeth Bus (ONE Bus) banner. Several long distance bus carriers serving New York City also serve Newark, with stops at Newark Penn Station or Newark Liberty International Airport. Table 4 lists all privately operated bus routes within Newark.

Route	Starting Point	End Destination
Olympia Trails Newark Airport Express	Newark - EWR Airport	New York - Port Authority Bus Terminal
ONEBus 24	Elizabeth - Seaport or Jersey Gardens Mall	Orange - Erie Loop
ONEBus 31	Newark - Penn Station	Maplewood - Loop or Livingston - Livingston Mall
ONEBus 44	Newark - Penn Station	Orange - Rail Station
Trans-Bridge Lines - Doylestown Route	Doylestown - Rail Station or Flemington - Park & Ride	New York - Port Authority Bus Terminal or JFK Airport
Trans-Bridge Lines - Allentown Route	Allentown - Bus Terminal or Bethlehem - Bus Terminal	New York - Port Authority Bus Terminal or JFK Airport
Susquehanna Trails	Williamsport or Lock Haven	New York - Port Authority Bus Terminal
Greyhound Bus Lines	Various	Various
DeCamp Route 44	Bloomfield - Franklin and Montgomery Streets	New York - Port Authority Bus Terminal

Table 4 - Privately Operated Bus Routes Serving Newark

Transportation Hubs

Within Newark and on its borders, there are several locations which serve as transportation hubs. These locations may focus on rail, bus, or freight transport as their primary function; however, they should be critical parts of the bus network. Travelers may not only want to travel between these locations, but because the hubs attract jobs, workers also need efficient access. Table 5 details how these facilities connect to each other via the bus network.

NEWARK PENN STATION

There are both on-street and off-street bus lanes underneath Newark Penn Station serving a total of twenty-eight NJ TRANSIT bus routes and two private bus routes. The off-street bus lanes, officially called the Raymond Boulevard bus lanes, serve Routes 5, 21, 39, 40, 62, 67, 70, 71, 72, 73, 75, 76, 78, 79, 108, 308, 319, and 378, with limited service from Routes 11, 28, and 29 on evenings and Sundays, and 30 evenings and weekends. The on-street bus lanes are located on Market Street and serve Routes 1, 25, go 25, 34, 361, and 375. The ONE Bus Routes 31 and 44 also operate out of Newark Penn Station. Long distance carriers serving Newark Penn Station include Greyhound Bus Lines and Susquehanna Trailways which operate adjacent to the intercity bus station on Raymond Plaza West.

BROAD STREET STATION

Although not a terminal, twelve NJ TRANSIT bus routes serve Newark's Broad Street rail station, including Routes 11, 13, 27, 28, 29, 39, 41, 43, 72, 76, 78, and 108. These buses primarily serve the North Broad Street downtown area as well as locations mainly north of Newark, including Belleville, Bloomfield, Nutley, Glen Ridge, Montclair, Wayne, Clifton, Passaic, Paterson, Harrison, Kearny, Jersey City, North Arlington, Lyndhurst, East Rutherford, Hasbrouck Heights, and Hackensack.

NEWARK LIBERTY INTERNATIONAL AIRPORT

Five NJ TRANSIT bus routes serve Newark Liberty International Airport Terminals A, B, and C. These buses provide service from Bloomfield and Belleville (go Bus Route 28), Irvington and Maplewood (Route 37), the Jersey Gardens Mall, Port Newark, Harrison, Kearny, and North Arlington (Route 40), Perth Amboy and Newark Penn Station (Route 62), and Tom's River and Lakewood (Route 67). Routes go 28, 37, and 40 also serve the North Area Transit Center on Brewster Road north of the airport. Private carriers serving the airport include the Trans-Bridge Lines services from Doylestown and Allentown and Olympia Trails service from New York City.

BRANCH BROOK PARK

The Branch Brook Park light rail station in northern Newark serves as a terminal for four NJ TRANSIT bus routes: 74, 90, 92, and 93. These routes serve local destinations in Newark as well as Belleville, Bloomfield, Irvington, East Orange, Orange, and South Orange, with one route (74) serving southern Passaic County destinations such as Clifton, Passaic, and Paterson. Route 27 also runs on nearby Franklin Street serving Nutley and Irvington. DeCamp's Route 44, a commuter route from Bloomfield to the Port Authority Bus Terminal in New York City, also operates on Franklin Street.

IRVINGTON BUS TERMINAL

The Irvington Bus Terminal is located just outside of Newark on Springfield Avenue near the Garden State Parkway in Irvington. Eight of the NJ TRANSIT buses that operate in Newark serve this facility. These include Routes 13, 25, 37, 42, 70, 90, 107, and 375. Route 13 serves Broad Street Station, Route 25 serves Newark Penn Station and Port Newark, Route 37 and 107 serve Newark Liberty International Airport, Route 42 serves 18th Avenue, Routes 70 and 375 serve Newark Penn Station, and Route 90 serves Branch Brook Park.

Route	Newark Penn Station	Broad St. Station	Newark Airport	Branch Brook Park	Irvington Bus Terminal	Newark/Port Elizabeth
Newark Penn Station		72, 76, 78, *	40, 62, 67	None, *	25, go25, 70, 375	25, 40
Broad Street Station	72, 76, 78, *		go28	27	13, 27	None
Newark Airport	40, 62, 67	go 28		None	37	40
Branch Brook Park	None, *	27	None		90	None
Irvington Bus Terminal	25, go25, 70, 375	13, 27	37	90		25
Port Newark/ Port Elizabeth	25, 40	None	40	None	25	

Table 5 - How Major Transportation Hubs Interconnect by Bus

* Newark Light Rail connects these locations

PORT NEWARK

The Port Authority of New York and New Jersey operates a major seaport in Newark and Elizabeth, however it is not well served by buses. Only two routes, NJ TRANSIT's Routes 25 and 40, serve Port Newark. Route 25 serves the northern section of the facility and provides access to Newark Penn Station, Irvington, and Maplewood, while Route 40 serves the Jersey Gardens Mall in Elizabeth, Newark Liberty International Airport, Harrison, and Kearny.

There are many reasons Port Newark and Port Elizabeth cannot be well served by traditional transit service. On the overwhelming majority of the roadways in and along the ports where there might be some level of demand, the physical characteristics preclude establishing bus stops that meet safety, accessibility and "permission" standards. Permission is required since municipalities control bus stops on their roadways and permission from a property owner and/or lessee is necessary on private property.

Many of the usable roadways to travel through or circulate the ports have no sidewalks. In other instances, such as Corbin Street (the main through and access road connecting Newark/Port Newark/Elizabeth Port), the southbound travel lane literally abuts an active freight track so no stops can be established. When requested, permission to establish stops at potentially feasible locations has been denied since stopping in single travel lanes is considered a safety hazard. Rail freight traffic and on-street switching moves frequently cause substantial delays of up to 30 minutes. Similarly, tractor-trailers queue on interior roadways to subsequently back into loading docks as they become available. This is a daily occurrence and contributes to less than satisfactory on-time performance as buses are trapped.

Another problem from an operating perspective is that NJ TRANSIT buses cannot operate on private properties (owned or leased) without permission. According to NJ Transit, many companies do not appear to want buses on their properties. Although not all employees have a car, employee access to jobs is an "issue" to most employers.

Bus Corridors

Several roads in Newark serve as major bus corridors, funneling local bus routes from various suburbs as well as from within Newark to the central business district. Table 6 lists the major corridors and they are depicted in Figure 16.

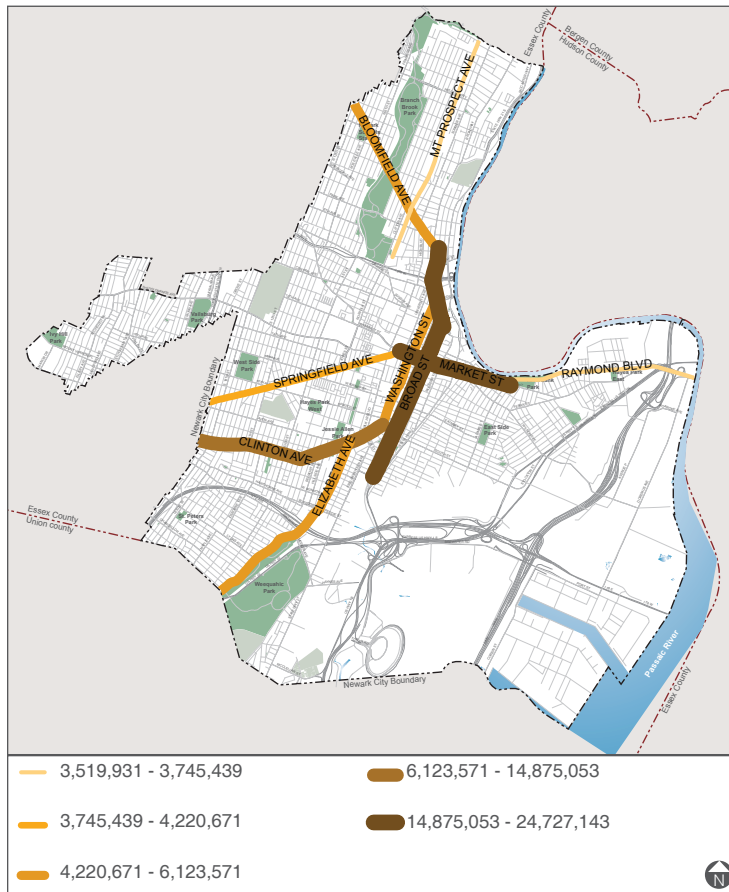


Figure 16 - Newark Annual Bus Passenger Volumes on Major Bus Corridors

Source: NJ Transit

Corridor	No. of Routes	Routes	2011 Annual Ridership (for routes serving the corridor)
Broad St.	19	11, 13, 27, 28, go28, 29, 30, 39, 40, 41, 43, 59, 62, 65, 66, 67, 70, 79, 319	24,727,143
Market St.	16	1, 5, 11, 21, 25, 28, 29, 34, 40, 71, 73, 79, 99, 108, 361, 375	21,261,389
Clinton Av.	7	13, 27, 39, 59, 65, 66, 70	14,875,053
Elizabeth Av.	6	37, 39, 59, 65, 66, 107	6,123,571
Washington St.	6	11, 28, 29, 65, 66, 70	5,649,430
Bloomfield Av.	6	11, 28, go28, 29, 72, 79	5,288,303
Springfield Av.	4	25, go25, 361, 375	4,220,671
Mt. Prospect Av.	1	27	3,745,439
Raymond Blvd.	6	40, 67, 70, 108, 319, 378	3,519,931

Table 6 - Major Bus Corridors in Newark

BROAD STREET

Broad Street is the main north-south corridor through the central business district; it runs from Route 21 at the southern end to Interstate 280 at the northern end. Broad Street passes Lincoln Park, the Prudential Center, Military Park, Washington Park, Rutgers University, and Broad Street Station. Connecting rail service is available at Military Park for the Newark Light Rail and at Newark Broad Street Station for the Newark Light Rail Broad Street Branch and the NJ TRANSIT Morris & Essex Lines including the Gladstone Branch and the Montclair-Boonton Line.

CLINTON AVENUE

Clinton Avenue is an east-west corridor that begins in Irvington and extends to Broad Street at Lincoln Park. It crosses several other major bus corridors including Springfield Avenue and Elizabeth Avenue.

SPRINGFIELD AVENUE

Springfield Avenue is an east-west corridor that extends from Market Street in Downtown Newark, traveling through Irvington (including the Irvington Bus Terminal) and Maplewood until it terminates at Route 82 in Springfield. The go25 bus runs along Springfield Avenue among other buses. Figure 17 shows the location of the go25 and other bus preferential treatments in Newark.

ELIZABETH AVENUE

Elizabeth Avenue starts near Chancellor Avenue and continues north along Weequahic Park. It travels under Route 78 and continues north until it feeds into Clinton Avenue.

RAYMOND BOULEVARD

During the evening peak period (from 3:30 to 6:30PM) on weekdays, an exclusive bus lane is operational from Raymond Plaza East to McCarter Highway/Route 21 for buses exiting Raymond Boulevard (Newark Penn Station) bus lanes.

MARKET STREET

Market Street is an east-west corridor in Newark running from Orange Street in the west to Ferry Street in the east. Market Street serves the University of Medicine and Dentistry of New Jersey (UMDNJ), Essex County College, the Prudential Center, Newark Penn Station, and the Ironbound neighborhood. NJ TRANSIT bus Routes 1, 5, 11, 21, 25, 28, 29, 34, 40, 71, 73, 79, 99, 108, 361, and 375 serve Market Street as does CoachUSA Route 31. The intersection of Market Street and Broad Street is a major bus hub for the Newark Bus System as 30 bus routes serve that location.

MOUNT PROSPECT AVENUE

Mount Prospect Avenue is a north-south corridor that extends from 7th Avenue to Mill Street and Belleville Park. It crosses Bloomfield Avenue and is a few blocks east of Branch Brook Park, running parallel to the park.

BLOOMFIELD AVENUE

Bloomfield Avenue is a major thoroughfare in Essex County, connecting Broadway in Newark with Route 46 in Fairfield via Bloomfield, Glen Ridge, Montclair, Verona, Caldwell, and West Caldwell. The go28 bus, among others, runs along Bloomfield Avenue. The go28 corridor has 14 key intersections with transit signal priority.

WASHINGTON STREET

Washington Street is a north-south corridor located parallel to and between Broad Street and Dr. Martin Luther King Boulevard. It starts at Clinton Avenue and travels north through the Downtown area, across Market Street and through the Rutgers Newark Campus, until it terminates adjacent to Washington Park at Broad Street. Washington Street is two-way from Clinton Avenue to West Kinney Street and then it continues as a one-way northbound road from West Kinney Street to Broad Street.

Another major bus flow that should be noted, although it is not a corridor, is to Newark Liberty International Airport and Port Newark/Port Elizabeth. There are seven bus routes that serve the airport and/or port area including Route 25, 37, 40, 62, 67, and 107.

Bus Preferential Treatments

Several roads in Newark provide preferential treatments for buses. These preferential treatments consist of priority bus lanes and exclusive bus lanes during the peak weekday periods. Figure 17 identifies the preferential treatment roadways/areas, as well as the routes of the go Bus program.

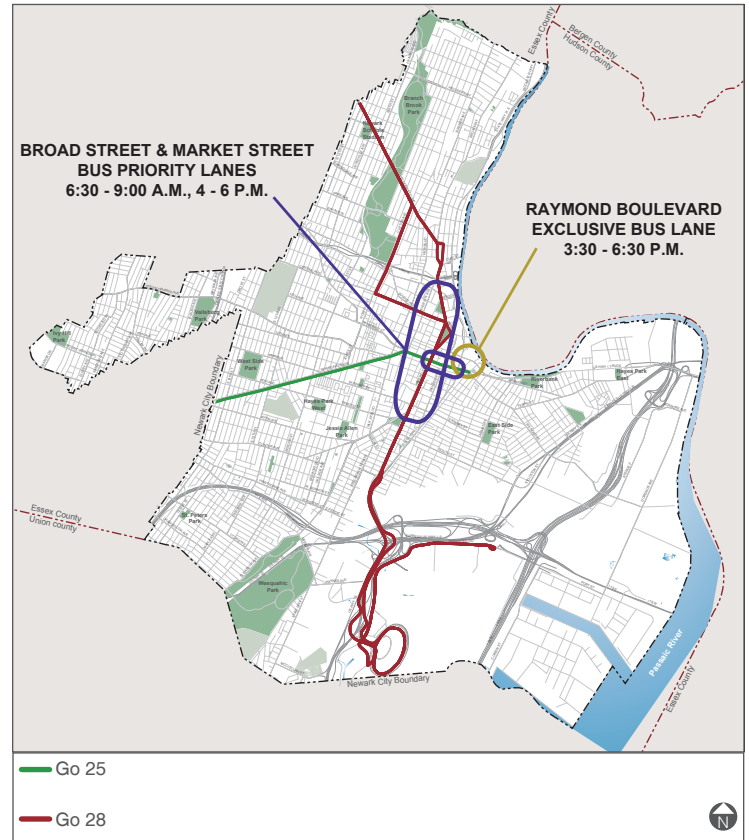


Figure 17 - Bus Preferential Treatments

Source: NJ Transit

Other Services

City residents have several other transit options, including NJ TRANSIT's Access Link program, which provides paratransit service comparable to local bus service to persons with disabilities. The origin and destination of each trip must be within $\frac{3}{4}$ mile of a local bus route. NJ TRANSIT also assists the Essex County Department of Citizen Services in offering bus service to three clientele: the elderly, the indigent, and the mentally and physically handicapped. Charter service is for social and recreational trips. Subscription service is provided on fixed routes for people going to nutrition sites, rehabilitation therapy, and life essential medical care. Demand-responsive service, which does not have predetermined routes but requires reservation 24 hours in advance, is for non-emergency medical trips.

Job Access/Reverse Commute (JARC) Service

NJ TRANSIT provides funding from JARC and through the County Division of Training and Employment for the Night Owl Service. This service runs from 1 AM to 5 AM between Newark, Irvington, Orange, and East Orange to Newark Penn Station. It provides free transportation for the unemployed, underemployed, low-income, and public assistance recipients, and is available to others. It is now serving over 100 persons per day.

In addition, the County and EZ Ride sponsor several services that provide access for Newark residents to jobs in outlying suburban areas, including the following:

ROUTE 10 SHUTTLE

This service is a flexible routed service for individuals to access employment in the Route 10 area between the hours of 6:00 and 9:00 AM, and 3:00 and 7:00 PM, seven days a week. EZ Ride operates this service using Essex county funding received from the JARC program.

ESSEX NIGHT OWL SHUTTLE

This shuttle provides free hourly shuttle service between Newark Penn Station and residents' homes that live in: Orange, East Orange, Irvington, Newark, terminating at Newark Penn Station. The shuttle operates seven days a week (Monday - Sunday) between the hours of 1:00am to 5:00am. The Essex Night Owl shuttle is funded by Essex County and NJ TRANSIT.

FAIRFIELD-WEST ESSEX SHUTTLE

This shuttle provides access to worksites in the Route 46 corridor during weekday peak periods.

MONTVALE SHUTTLE

This service operates Thursday through Sunday, picking up riders in Newark and transporting them to jobs at the Montvale rest stop along the Garden State Parkway.

MEADOWLANDS SHUTTLE

This service operates during weekday peak hours from Rutherford Rail Station to the Meadows Office Complex and the Federal Reserve Bank in East Rutherford. About 54% of the commuters using this service are from Newark and use NJ TRANSIT's #76 bus route to reach Rutherford. EZ Ride operates this service using Essex County funding received from the JARC program.

ARAMARK SHUTTLE

This service provides transportation for Aramark employees from Newark to MetLife Stadium for weekend and late-night hours during the football season.

RUTGERS – NEWARK

Rutgers University operates the College Town Shuttle, comprising several routes which provides the following weekday service:

PENN STATION ROUTE

Provides continuous transportation between NJIT, Rutgers and Newark Penn Station Monday through Friday from 4 PM to 12 AM at 20-minute intervals.

COUNCIL FOR HIGHER EDUCATION IN NEWARK (C.H.E.N.) ROUTES

Provide continuous transportation throughout Rutgers, the University of Medicine and Dentistry of New Jersey, Essex County College, and the New Jersey Institute of Technology. This shuttle operates Monday through Friday from 8 AM to 10 PM at 15-minute intervals.

KEARNY/HARRISON ROUTES

Provide transportation for the Rutgers and NJIT community to various locations in Harrison and Kearny. These shuttles operate Monday through Friday from 3:30 PM to 12 AM at 30-minute intervals.

ROBERT TREAT ROUTE

Provides transportation from Rutgers Newark to the Robert Treat Hotel Monday through Friday from 4 PM to 11 PM at 15-minute intervals.

BROAD STREET STATION/NORTH PARKING LOT SHUTTLE

Provides transportation to Broad Street Rail Station and Rutgers parking lots on Eagle and Essex Street. This service is available Monday through Thursday from 9 AM to 5 PM at 10-minute intervals.

Roadways

Within the national and regional road network, Newark occupies a prime location. Nearly a million people travel on roads through Newark every day using the various interstates, regional roads, county and local road network. The interstates such as I-95, I-78, and I-280 provide regional access through the state and each accommodate more than 100,000 vehicles per day (I-95 typically accommodates more than 200,000 vehicles per day). The state roadways such as Route 1&9, Route 22, and Route 21 provide access throughout northern New Jersey, and each accommodate between 50,000 and 100,000 vehicles per day. The county and local roadways provide access and move people throughout the various neighborhoods and areas of the city. The major roadway network of Newark is shown in Figure 18.

Interstates and Freeways

Three interstate roadways serve Newark. Each of these interstates provides regional connectivity to the City and allows motorists from other areas of New Jersey and beyond to access Newark. Interstates are multi-lane, limited access roadways which have grade separated ramp access systems and generally have speed limits of 55 MPH and greater.

INTERSTATE 95 (NEW JERSEY TURNPIKE)

The portion of I-95 that serves Newark is part of the New Jersey Turnpike system (NJ Turnpike) and is under the jurisdiction of the NJ Turnpike Authority. The NJ Turnpike is a limited access toll roadway which stretches the length of the state. Newark is served by several exits from the NJ Turnpike. Exit 13A is located just to the south of Newark Liberty International Airport and provides access to Route 1&9 in the south portion of Newark. Exit 14 is located just north of Newark Liberty International Airport and is adjacent to Port Newark. This exit provides access to Interstate 78 and Route 1&9. Exit 15E is located just to the north of Port Newark and provides access to the Port area and Route 1&9. I-95 itself runs from Maine to Miami.

INTERSTATE 78

I-78, which stretches east-west across New Jersey, and terminates in Newark, is a limited access non-toll roadway. NJDOT maintains jurisdiction between the Pennsylvania line and the NJ Turnpike. The NJ Turnpike Authority maintains jurisdiction between the NJ Turnpike and the Holland Tunnel. Several exits from I-78 serve Newark. Exit 54 is a partial interchange which is located in the southwest corner of the city at Winans Avenue. Exit 55 is another partial interchange which provides access to Lyons Avenue. Exit 56 is a partial interchange which is located in the center of the

residential portion of the city and provides access to Elizabeth Avenue. Exit 57 provides access to Route 1&9, Route 21, and the terminal area of Newark Liberty International Airport. Exit 58 provides access to NJ Turnpike/Routes 1&9 and the north area of Newark Liberty International Airport.

INTERSTATE 280

I-280 runs east-west through the northern part of Newark. It links Newark to western Essex County and Morris County to the west, and with the NJ Turnpike, to the east. I-280 is a limited access non-toll road under the jurisdiction of the NJDOT. It provides a more localized service among the Newark metropolitan area and reaches directly to neighborhoods in the city. I-280 connects to the NJ Turnpike (I-95) to the east and terminates at I 80 to the west. I-280 has several exits that serve Newark. Exit 13 is a partial interchange which is located in the vicinity of the University Heights section of the city and provides access to 1st Street. Exit 14 is a partial interchange which provides access to Dr. Martin Luther King Jr. Boulevard. Exit 15 is a partial interchange with Route 21, which is located just to the north of Downtown Newark. Plans have been developed to complete and improve the interchange with Route 21.

Regional and State Roads

There are three (3) regional and state highways that serve the City of Newark. Each of these highways provides a regional connectivity to the City as well as local access. These roadways are typically multi lane providing a mix of grade separated interchanges with at grade signalized and unsignalized intersection control. Sections of each of these roadways are very regional in nature while other sections provide direct access to adjoining properties and land uses.

US ROUTE 1&9

US Routes 1 and 9 run concurrently from their junction in Woodbridge Township, New Jersey to New York City. Route 1&9 runs generally north/south through Newark. Route 1&9 is a limited access non-toll road which is under the jurisdiction of NJDOT. It links Newark to Jersey City in the east, and Elizabeth, Linden, and other points to the south. US Route 1&9 runs generally parallel to the NJ Turnpike east of Downtown Newark and west of Newark Liberty International Airport and Port Newark. At the interchange with the NJ Turnpike, Route 1&9 splits into Route 1&9 (which uses the Pulaski Skyway) and Truck Route 1&9 (which is named Lincoln Highway slightly south of the Pulaski Skyway, as it travels across South Kearny). Truck Route 1&9 is routinely used as an alternate to the NJ Turnpike for trucks and for shorter trips in and around the port area.

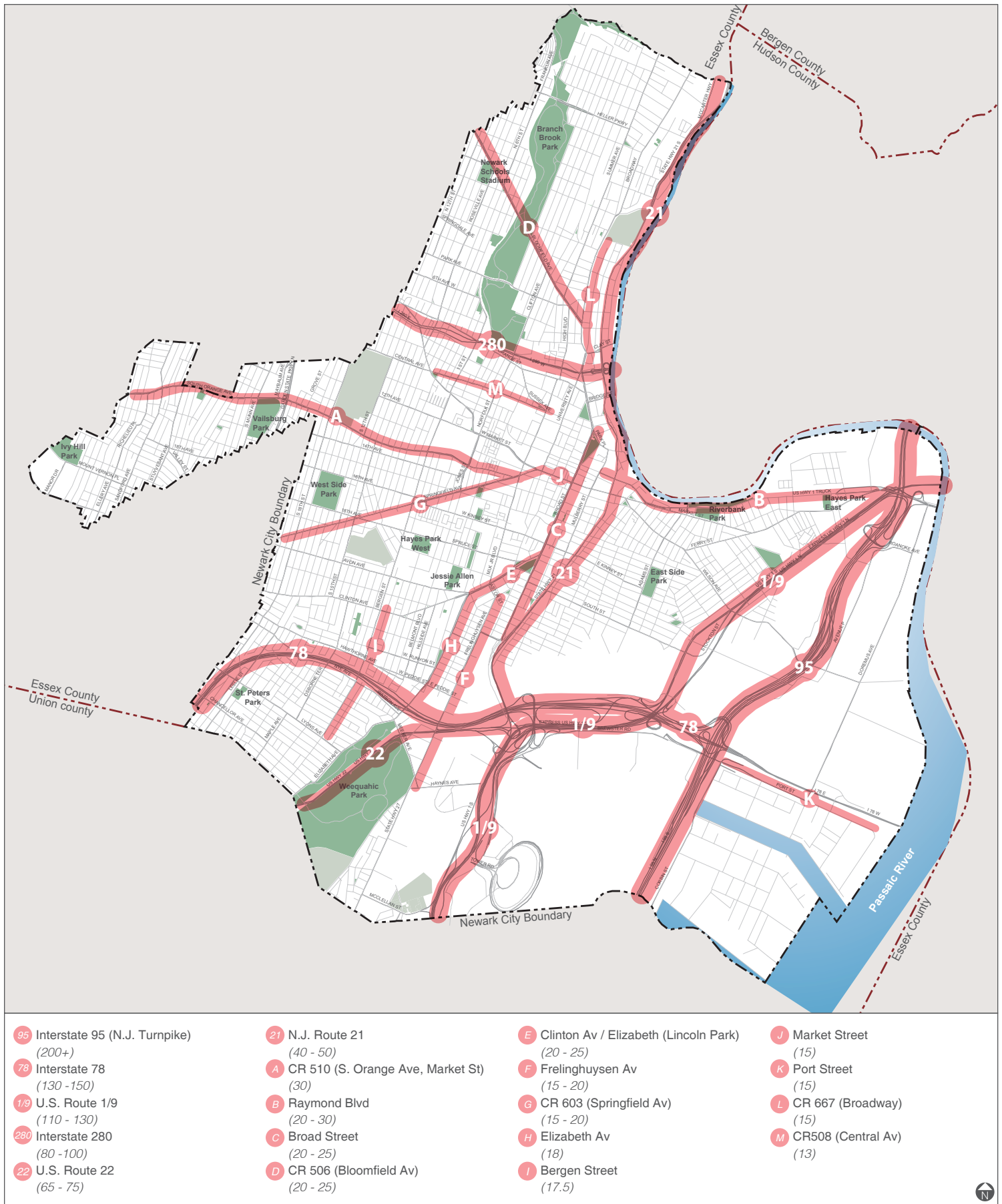


Figure 18 - Daily Traffic Volumes (thousands), Major Roadway Network through Newark

Source: Available state, city, and SSE 2011 data collection

US ROUTE 22

Route 22 is a limited access non-toll road, under the jurisdiction of NJDOT, which traverses New Jersey from west to east and terminates in Newark. It connects Newark to western Union County and Somerset County as well as I-78 and US 1&9 in the southern portion of the city. Route 22 enters Newark from the west at the south end of the city and terminates at its interchange with U.S. Route 1&9 near Newark Liberty International Airport.

NJ ROUTE 21

Route 21 is known as McCarter Highway in Newark. It runs north-south through the city and passes just west of Newark Penn Station and east of Downtown Newark along the west bank of the Passaic River. Route 21 is under the jurisdiction of NJDOT. It is heavily traveled by commuters and trucks reaching city districts. The north portion of Route 21 is a freeway and allows for higher-speed travel to the industrial areas of neighboring Passaic to the north, and also for direct connection to Route 3. The south portion of Route 21 is an at-grade arterial controlled by traffic signals. It terminates at the interchange of Routes 22 and 78 at Newark Liberty International Airport. Along this stretch of arterial operation, Route 21 includes several transition points to distribute local traffic to collector and minor streets. Some driveways are also directly accessed from Route 21. Major pedestrian crossings are located at Raymond Boulevard and Market Street.

County Roads

Several arterial roadways under Essex County jurisdiction serve the City of Newark. These roadways move traffic through the city and provide connection to nearby municipalities. These roadways are controlled by traffic signals. They provide direct access to adjacent properties. Many offer on-street parking. Below is a list of county roads in Newark:

- CR 506 (Bloomfield Avenue)
- CR 508 (Central Avenue)
- CR 510 (South Orange Avenue, Market Street)
- CR 601 (Chancellor Avenue)
- CR 602 (Lyons Avenue)
- CR 603 (Springfield Avenue)
- CR 605 (Sanford Avenue)
- CR 619 (Stuyvesant Avenue)
- CR 645 (Franklin Avenue)
- CR 658 (Park Avenue)
- CR 665 (Irvington Avenue)
- CR 667 (Broadway)

Collector / Local Roads

Several collector/local roadways are under the jurisdiction of the City of Newark. These roadways are similar to the County roadways in that they move traffic through the city and provide connection to nearby municipalities. These roadways are controlled by traffic signals. They provide direct access to adjacent properties and offer on-street parking.

North / South	East / West
Doremus Avenue	Raymond Boulevard
Broad Street	Heller Parkway
Mount Prospect Avenue	Orange Street
Martin Luther King Jr. Blvd	Clinton Avenue
Irvine Turner Blvd	Market Street
Bergen Street	Ferry Street
Elizabeth Avenue	Lafayette Street
North 6th Street	Port Street
Washington Street	Clinton Avenue
University Avenue	Lyone Avenue
Frelinghuysen Avenue	Park Avenue
Broadway	Chancellor Avenue

Traffic Volume (Motor Vehicle) Data Collection

A comprehensive traffic data collection program was undertaken throughout Newark for the Mobility Element. This program included the collection of historical data obtained from the City and Essex County Engineering Departments, NJDOT, and the recording of current traffic volumes. The historical traffic data includes a mixture of turning movement data, and hourly and daily corridor data. It was compiled over the past 5 years.

In addition to the historical volumes from the City, County, and NJDOT, the Regional Model is fully populated with traffic data from various sources. The traffic volume data along the critical corridors has been used where appropriate and has been updated where necessary.

Current traffic volumes were recorded through the installation of Automatic Traffic Recorders (ATRs). These ATRs were installed for a period of one week to obtain hourly, daily, and weekly traffic volume information for the critical corridors throughout the city.

All traffic volume data and summary tables are contained within Appendix A of the Mobility Element.

High Crash Intersections

The crash history for the roadways and intersections within Newark was evaluated and analyzed. The crash data from 2006 to 2010 was obtained from the New Jersey Turnpike Authority (NJTA), and it was sourced from the Plan4Safety data from NJDOT and Rutgers Center for Advanced Infrastructure and Transportation (CAIT). This data indicates that the roadways and intersections within the City of Newark have an average crash history of over 9,000 crashes per year.

Over one-third of the crashes in Newark resulted in an injury to either a motorist or a pedestrian. Since 2005, more than 2,300 crashes involving pedestrians have been reported. Between 2006 and 2010, the 46,500 crashes resulted in a total of 102 fatalities, including 33 pedestrians (41 pedestrians have been killed since 2005).

According to the 2011 Pedestrian Safety Tracking Report, in Newark the largest number of pedestrian crashes occurs from October-December months and that both fatalities and injuries are highest on Fridays. The city of Newark averaged 2.1 pedestrian fatalities a year per 100,000 people from 2003-2010. Figure 19 illustrates the vehicular crashes involving pedestrians from 2003 through 2010, highlighting the number of crashes per intersection.

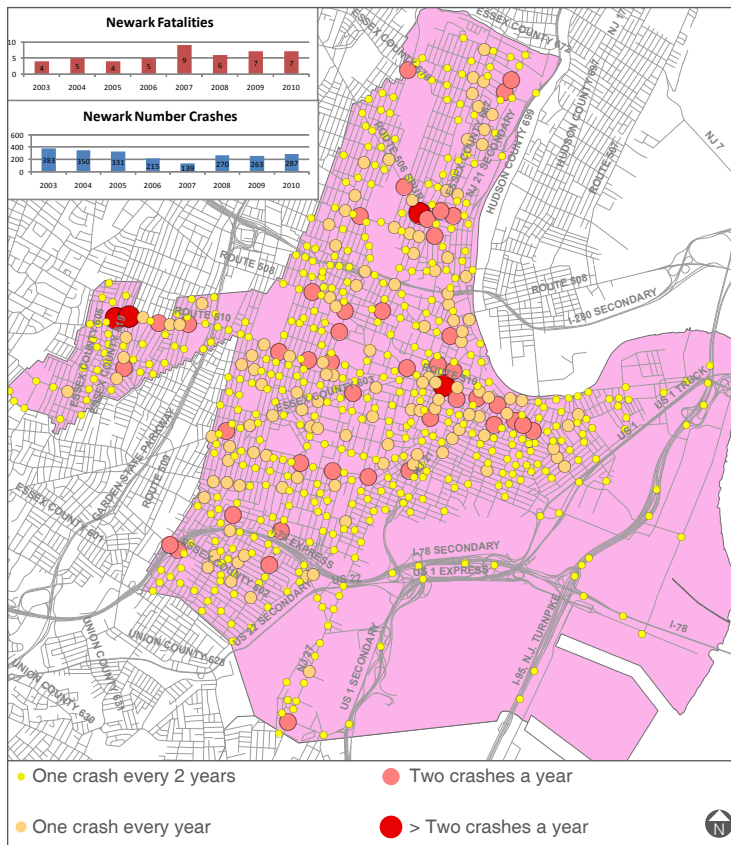


Figure 19 - Newark Pedestrian/Vehicle Crashes, 2003-2010

Source: 2011 Pedestrian Safety Tracking Report, Alan M. Voorhees Transportation Center - Rutgers

The two streets with the highest pedestrian deaths were Broad Street and Route 21, both with six deaths since 2005. 30% of pedestrian crashes occurred after dark. Table 7 illustrates the crash history along the roadways and intersections within Newark over the past 5 years.

A more detailed review was conducted in 2010 to identify the intersections that experience the most crashes and the highest crash rates within Newark. A review of Figure 20 indicates that the high crash corridors consist of the state highways and the county roadways that serve as gateways into and through the city.

Year	2006*	2007*	2008	2009	2010	Total
Total Crashes	8,660	6,377	12,002	10,047	9,451	46,537
All Injuries	3,388	2,453	4,778	4,513	3,387	18,519
Pedestrian Injuries	241	209	433	373	340	1,596
All Fatalities	21	30	25	16	10	102
Pedestrian Fatalities	3	12	7	6	5	33

* Crash reporting inconsistencies were noted during 2006 & 2007

Table 7 - Crashes in Newark, 2006-2010

Source: Plan4Safety data from NJDOT and Rutgers CAIT

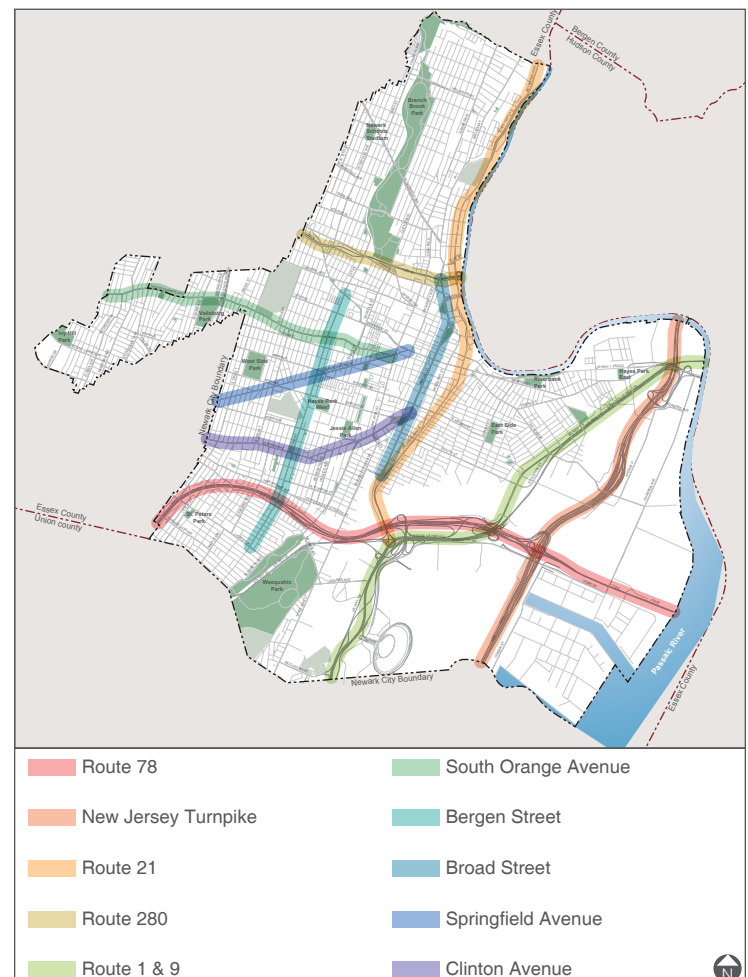


Figure 20 - High Crash Corridors in Newark

Source: NJDOT and Rutgers CAIT Plan4Safety data

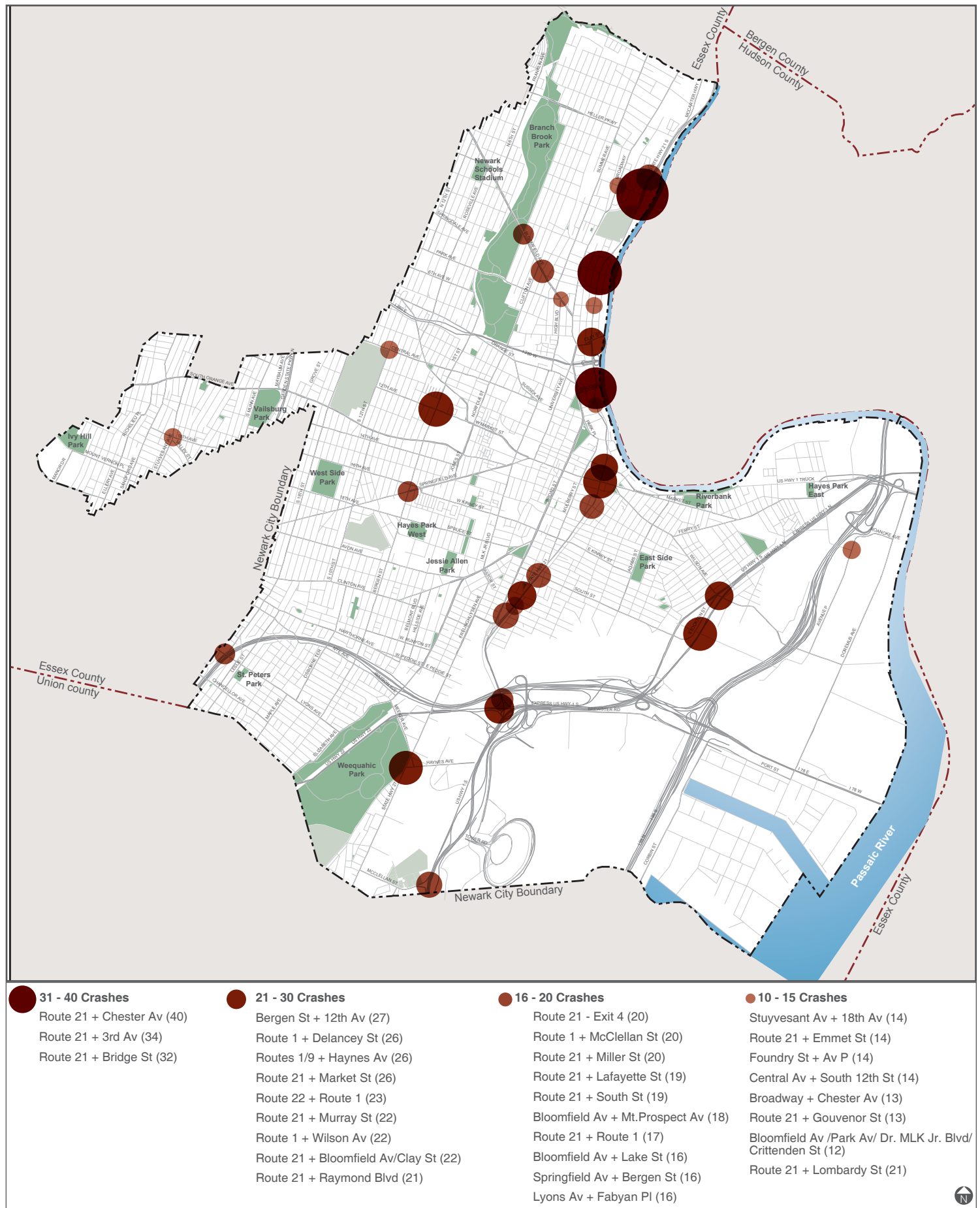


Figure 21 - High Crash Intersections in Newark, number

Source: NJDOT and Rutgers CAIT Plan4Safety data

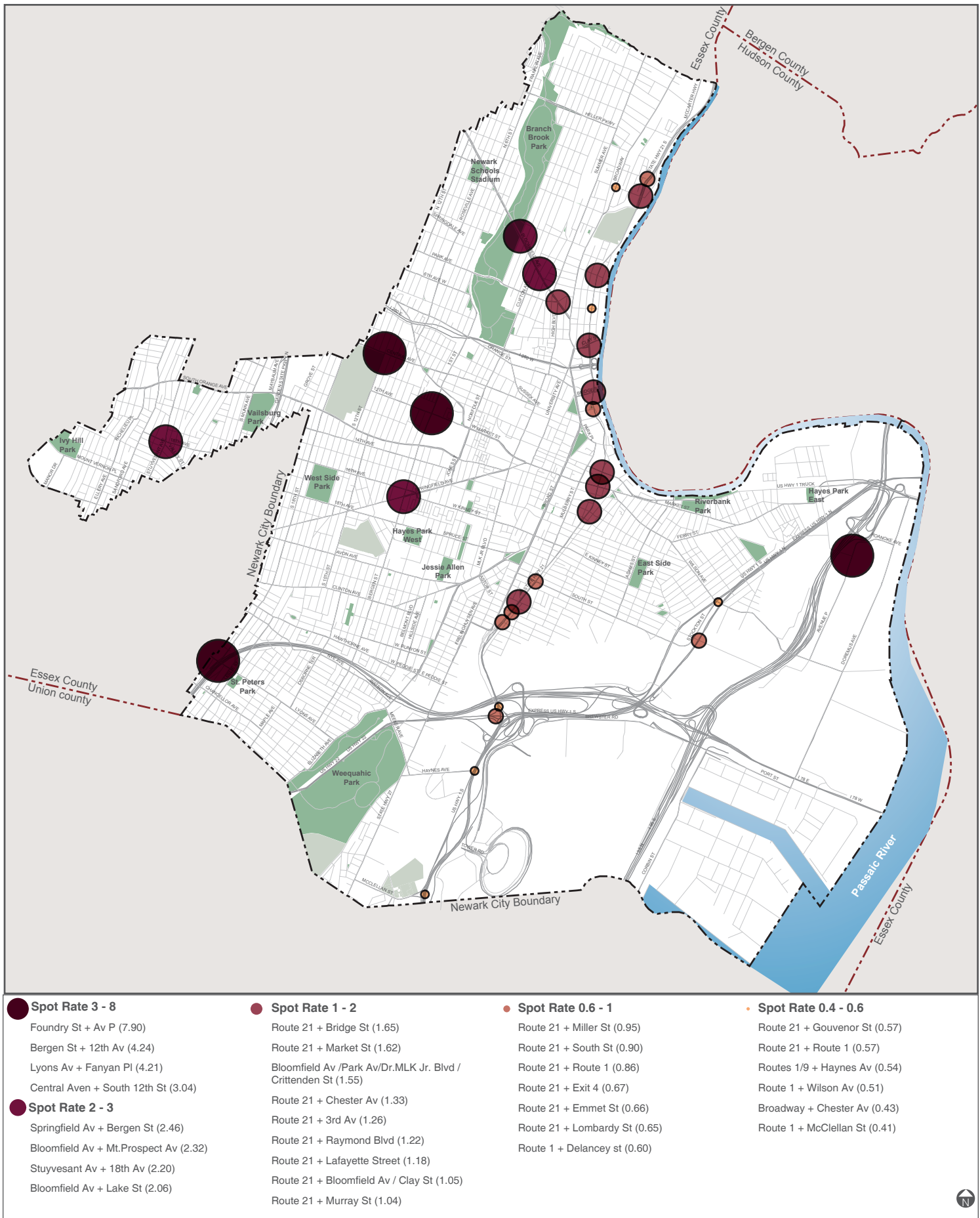


Figure 22 - High Crash Intersections in Newark, rate (spot location crash rate)

Source: NJDOT and Rutgers CAIT Plan4Safety data

The high frequency crash locations are primarily located along the state highway routes (Route 1&9 and Route 21) (see Figure 21). This is expected due to the higher volume, speed, and levels of congestion.

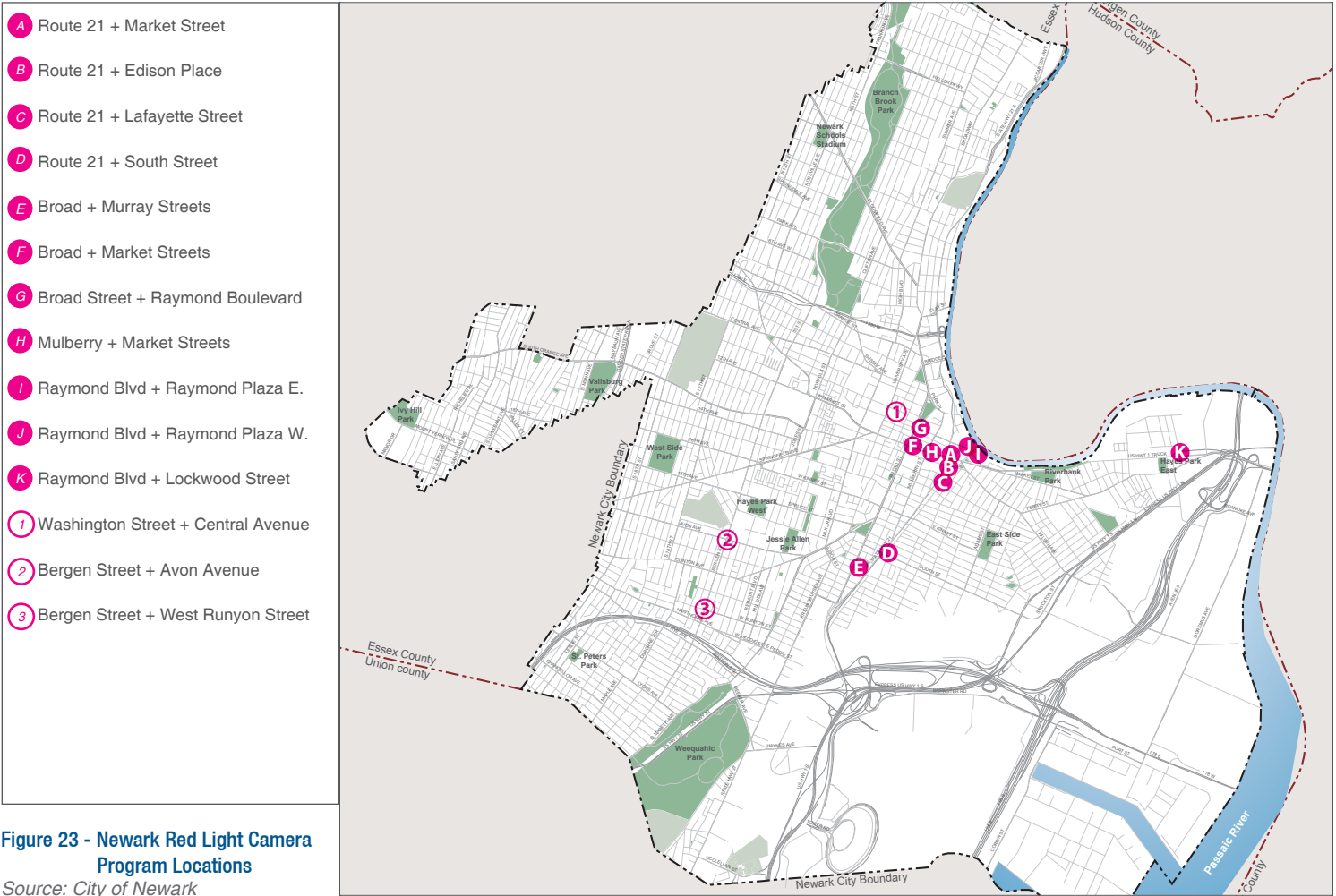
Although the 2010 data indicates that the state highway routes have the highest frequency crash locations, it should be noted that the locations with the highest crash rates are actually at the local and county intersections (see Figure 22). This is due to the relatively high number of crashes when compared to the volume of traffic accommodated through the intersection. The crash rates were estimated using traffic volume data, where available, and by estimating the traffic volumes where data was not readily available.

The above crash data should be used by the City as a way to identify future improvements, prioritize additional safety measures, and obtain funding for safety related projects, the details of which are discussed in later sections of the Mobility Element.

Red Light Camera Enforcement Program

In an effort to improve safety throughout Newark, particularly at signalized intersections, a Red Light Camera program has been implemented. The program began in 2009 and continues to expand, with a total of 11 locations currently installed, another 3 locations approved by the NJDOT for installation and another 22 locations pending approval. Figure 23 illustrates the locations of the Red Light Camera Program locations.

The Red Light Camera program has been successful in improving intersection safety throughout Newark. In 2010, the program consisted of 10 intersections—24 approaches—and 93,634 citations were issued. Since 2010, the City added another location and three have been approved for installation. During the same period, Newark experienced a 15%-25% decrease in injury crashes. Specifically, the intersection of Broad Street and Raymond Boulevard experienced a 75% decrease in overall crashes, and the intersection of Broad Street and Market Street experienced a 25% decrease in overall crashes. There is an increased awareness of red light running, not only at the intersections with the cameras, but also at the other intersections throughout Newark.



Roadway Congestion

Traffic volume congestion for the roadways within the city has been identified utilizing the North Jersey Regional Transportation Model Enhanced (NJRTME). All of the major regional freeway, highway, and interstate roadways are coded in NJRTM, including the NJ Turnpike, Route 1&9, I-78, I-280, and Route 22. In addition, all of the major arterials in and through Newark are included in this analysis.

For purposes of this report, roadway congestion is defined in three categories:

- Low = roadways and intersections are under capacity and generally operate with little to no congestion
- Moderate = roadways and intersections are nearing capacity and generally operate with moderate congestion
- Severe = roadways and intersections are over capacity and generally operate with high levels of congestion

These categories are based on a ratio of the traffic volume to the available roadway capacity. The term is commonly known as the volume to capacity, or VC, ratio. Roadway and intersection congestion can also be related to Level of Service (LOS), which ranges from “A” (free flowing conditions) through “F” (highly congested conditions).

Table 8 illustrates the congestion definitions used in the following figures.

Congestion Category	Volume to Capacity Ratio (VC)	Level of Service Comparison (LOS)
Low	0.0 to 0.9	A, B, C
Moderate	> 0.9 - 1.2	D, E
Severe	> 1.2	F

Table 8 - Congestion Definitions

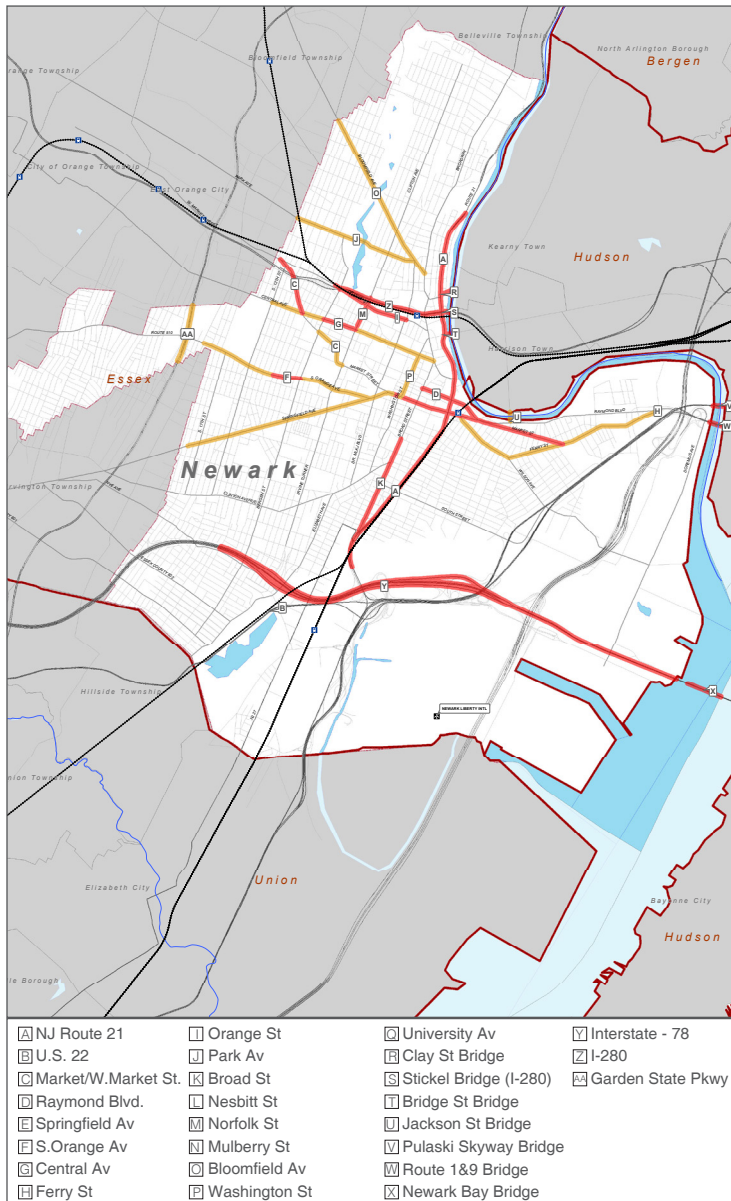


Figure 24 - 2010, AM Peak Roadway Congestion in Newark

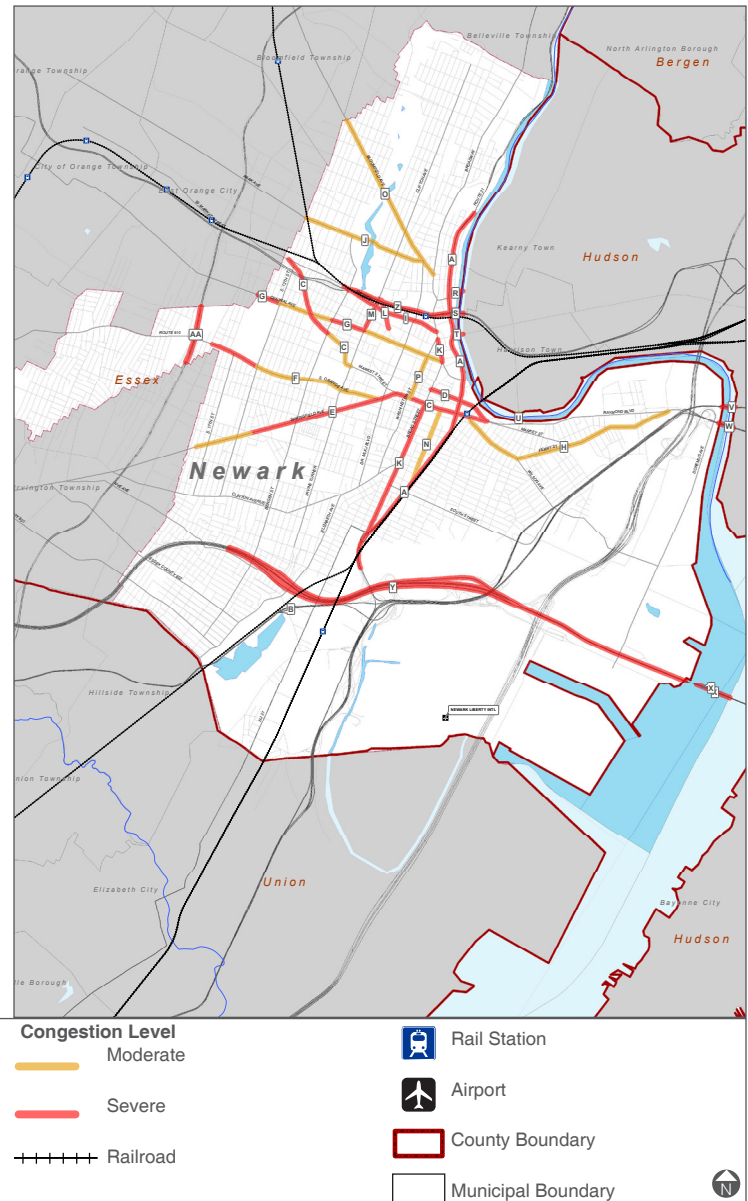


Figure 25 - 2010, PM Peak Roadway Congestion in Newark

Figures 24 and 25 illustrate the roadways within Newark where congestion occurs and the severity of that congestion during the morning and evening weekday peak periods. The roadways that experience severe congestion during the weekday morning and evening peak periods include I-78 to the NJ Turnpike, Route 280, Route 21 in both directions through nearly the entire City of Newark, Broad Street, Market Street, Raymond Boulevard, segments of Springfield Avenue, South Orange Avenue, as well as every bridge providing access to Newark

In addition, several local roadways in Newark are congested during the peak commuter periods of the day, particularly during days and times when various entertainment venues have events occurring. In general, the Newark roadways experience higher levels of congestion during the evening peak period than in the morning peak period.

Bridges

Eight roadway bridges cross the Passaic River in the vicinity of Newark. These bridges range from large structures that carry interstate highways, to smaller bridges that connect areas in Newark with neighborhoods in other municipalities on the opposite side of the Passaic River. These latter types of bridges could be enhanced to better facilitate use by bicyclists and pedestrians traveling between surrounding neighborhoods and employment centers.

HIGHWAY BRIDGES

- The NJ Turnpike is carried on a bridge between the port section of Newark and the Town of Kearny.
- The Newark Bay Bridge carries I-78 between Newark Liberty International Airport and Bayonne.
- The William Stickel Bridge carries I-280 between the north portion of Newark and the Town of Harrison. The Stickel Bridge is a movable bridge which is highly congested in the eastbound direction in the morning and in both directions during the evening peak period. The bridge is part of a much longer congestion queue seen on I-280. It does not seem to be the primary cause of congestion in the area but certainly is a contributing factor.
- The Pulaski Skyway carries US Route 1/9 between the Port section of Newark and the Town of Kearny. Traffic on this bridge is highly directional. During the morning peak, the bridge is highly congested heading northbound into Jersey City, and in the evening it is highly congested in the southbound direction heading back into Newark. Truck traffic is not allowed on the Pulaski Skyway.

- The Lincoln Highway carries Truck Route 1&9 Truck between the Port section of Newark and the Town of Kearny. It is parallel to the Pulaski Skyway and carries the trucks that are prohibited on the Pulaski Skyway. There are traffic signals along Lincoln Highway. The Lincoln Highway is the main truck route from Newark into Jersey City. There is congestion northbound in the morning peak period and southbound in the evening peak period.

NON-HIGHWAY BRIDGES

- The Clay Street Bridge is a movable bridge which connects the north portion of Newark to East Newark. It experiences heavy congestion in both directions during both the morning and evening peak periods. The congestion is the most severe during evening peak periods, westbound into Newark.
- The Bridge Street Bridge is a movable bridge which connects the central business district of Newark and the Town of Harrison. There is congestion on or in the vicinity of the bridge in both the morning and evening peak periods. Factors leading to the bridge's congestion include: the traffic signals at both ends, volume of traffic, turning traffic and congestion on Harrison Avenue.
- The Jackson Street Bridge is a movable bridge which connects Newark's Ironbound neighborhood and the Town of Harrison. Congestion on the Jackson Street Bridge and its approaches is moderate in the morning and evening peak periods.

Other bridges and/or road overpasses within Newark include:

- Haynes Avenue between Avenue L and Hyatt Avenue
- Central Avenue at Hudson Street
- Summit Street over Raymond Blvd
- Martin Luther King Jr. Blvd over Raymond Blvd
- Heller Parkway over the Newark Light Rail
- Doremus Avenue over Oak Island Parkway
- Wilson Avenue over Brills Yards
- Colden Street over Raymond Blvd

Bicycle Facilities

Bicycle routes are generally one of the following types:

- Class I, protected bicycle path: generally consist of off-street greenways or multi-use paths, or protected on-street bicycle lanes (also known as cycle tracks).
- Class II, bicycle lane: generally consist of standard bicycle lanes which may be buffered, with a striped or hatched area.
- Class III, bicycle route: generally do not include dedicated bicycle space. Bicyclists use the same lane as motorists, and the space is shared. Bicycle boulevards are also generally considered class-III routes.
- Wide shoulder lane: In areas where on-street parking is allowed but parking demand is low with relatively few parked cars, the parking lane may be striped and also serve as a de facto bicycle lane.

Newark's existing bicycle facilities are limited to the following:

Bicycle Lanes

- Clifton Avenue, class-II bicycle lane: Two blocks between 7th Avenue and Orange Street (southbound direction); one block between Orange Street and 8th Avenue (northbound direction) (see Figure 26). While short in length, this bicycle lane adds to the comfort and safety of cyclists traversing the busy I-280 overpass, and would logically be a part of a central north-south bicycle route, including the Irvine Turner Blvd. and Mt. Prospect Avenue bicycle routes described below.
- First Street, class-II bicycle lane: Three blocks between Sussex Avenue and New Street (see Figure 27).

Both of the above bicycle lanes are 4 feet wide. The minimum width for a bicycle lane is 5 feet if the lane is adjacent to a curb, as is the case with these (Guide for the Development of Bicycle Facilities, American Association of State Highway Transportation Officials, 1999). Achieving the required 5-foot minimum would not be difficult to achieve given that the adjacent vehicle lanes are 12 feet wide. Ten-foot lanes are generally sufficient and, in addition, slow vehicles.

Park Facilities for Biking

Newark's two largest parks, Branch Brook and Weequahic, have facilities that are pleasant for cycling but do not have cycling facilities per se. As shown in Figure 28, the Branch Brook Park loop road has a delineated parking lane/wide shoulder that serves, where not occupied by parked cars, as a de facto bicycle lane.

Traffic within the parks is relatively light, and there are off-street paths as well. However, maintenance of the off-street paths varies widely, with some in excellent condition and others poorly maintained, with many broken asphalt and gravel/dirt sections.

Branch Brook and Weequahic parks are under the jurisdiction of Essex County. Essex County park regulations prohibit cycling off of "paved roadways". Presumably the definition of "roadway" refers to space designed for automobiles, and thus off-street cycling appears to be prohibited. However, with the exception of the rubberized Weequahic Park jogging track, there is no regulatory signage within the parks prohibiting cycling, and the regulation is largely unenforced. In fact, a segment of the East Coast Greenway (ECG) follows a signed, off-street route within Weequahic Park.

East Coast Greenway

ECG is envisioned as a continuous, traffic-free greenway serving self-powered users on a 3,000-mile trail system linking 25 major cities from Maine to Florida. This city-to-city travel corridor was launched in 1991 with the formation of the East Coast Greenway Alliance, the not-for-profit organization spearheading the effort. On an interim basis, certain sections of the greenway will be on-street.

The existing ECG through Newark is shown in Figure 29. Certain portions of this route correspond to routes identified in the City's Newark Greenway Network Project Final Design Proposal, and are identified by ECG signage. The Newark Greenway Network Project Final Design Proposal recommends several bicycle routes in central Newark. The signs also include the Liberty – Water Gap Trail, a walking trail running from the Statue of Liberty to the Delaware Water Gap. While the route for ECG has been identified, no bicycle infrastructure (beyond signage) has been implemented. The on-street portion of the existing route terminates at Newark Penn Station and continues via PATH to Jersey City. The East Coast Greenway Alliance proposes to extend the route through the Ironbound when a safe bicycle crossing of the Passaic and Hackensack rivers to Jersey City is developed.

Bicycle Lanes Under Construction

Class II bicycle lanes are currently (June 2011) under construction on an approximately 0.9-mile section of Irvine Turner Blvd from Clinton Avenue to Springfield Avenue, as part of a larger traffic calming project. The project is scheduled for completion in spring 2012. This route is the central north-south spine recommended in the Newark Greenway Network Project Final Design Proposal.

Planned Bicycle Lanes

The following bicycle lanes are planned:

- Mt. Prospect Avenue from Tiffany Blvd to Heller Pkwy: This 0.6-mile bicycle route is planned as either a class I on-street, parking-protected route or as a class II bicycle lane. Construction is expected to conclude in 2012.
- Washington Street from Broad Street to Raymond Blvd: This 0.5-mile route is planned as a class II buffered bicycle lane; implementation is expected in 2012. Implementation of the route was requested by Rutgers University – Newark as the northbound portion of a Washington Street – University Avenue north-south couplet. No bicycle facilities are



Figure 26 - Clinton Avenue Bicycle Lane



Figure 27 - First Street Bicycle Lane

currently planned for University Avenue, but are proposed under the Newark Greenway Network Project Final Design Proposal. Recent traffic calming treatments on University Avenue make for relatively pleasant cycling on the street through the Rutgers – Newark campus.

Figure 29 indicates the all of the bicycle facilities either existing, under construction, and/or currently planned.



Figure 28 - South Ward Place, Branch Brook Park

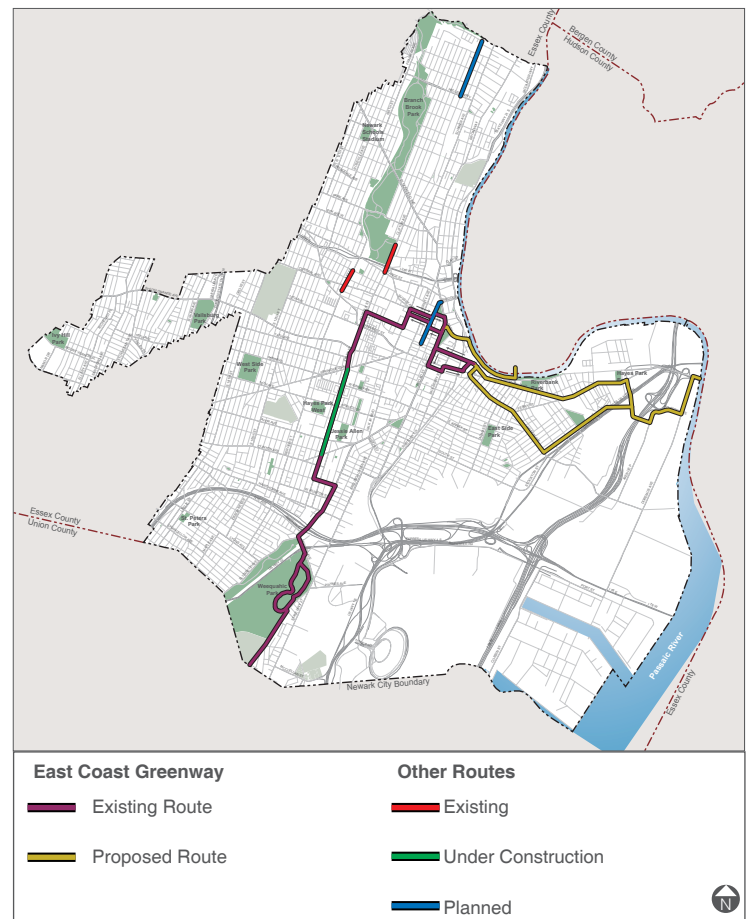


Figure 29 - Newark Bicycle Routes, existing, under construction, & planned

Bicycle Parking

The following NJ TRANSIT commuter train and light rail stations include bicycle racks:

- Branch Brook Park
- Broad Street Station
- Newark Penn Station

There is space for approximately 24 bicycles at the 12 racks on Raymond Plaza East at Newark Penn Station, but the racks are typically full, with more than 50 bicycles locked to the nearby fence (signed “Do Not Lock Bikes on Fence”). In addition to bicycle racks, secure bicycle storage lockers are located at some NJ TRANSIT stations, although none within the City of Newark.

Rutgers University – Newark recently constructed a bicycle storage facility within the new Bike Park pocket park on campus (see Figure 30).

Bikeshare

Rutgers University has a small bikeshare program that encourages short-term bicycle rentals to discourage driving on/near campus. Bikeshare programs are popular in numerous European cities and expanding rapidly in North America. They allow cyclists to obtain a bicycle at one of numerous kiosks and return them to any other bikeshare kiosk. Bikeshare systems can significantly improve mobility and reduce the need for automobile use, while eliminating issues associated with bicycle ownership and storage.



Figure 30 - Rutgers, Newark Bike Park

Pedestrian Facilities

Background and Safety

A pedestrian transportation system is composed of pedestrian facilities, such as sidewalks, curb ramps, multi-use paths, crosswalks, traffic-calming features, and grade-separated crossings. The system also includes elements that encourage walking, such as landscaping, lighting, street furniture and other streetscape amenities, as well as designs that help make walking safer and more convenient.

Newark's existing pedestrian transportation system plays a crucial role in the mobility of Newark residents, as 8 percent walk to work, 26 percent take public transportation to work, and nearly 40 percent of Newark residents have no access to a vehicle, according to the 2010 Census.

PEDESTRIAN SAFETY FOCUS CITY

Since 2005, however, there have been 2,320 pedestrian crashes reported in Newark, including 41 pedestrian fatalities⁸. Given the high number of pedestrian fatalities occurring in the city, the Federal Highway Administration recently designated Newark a "Pedestrian Safety Focus City". Cities are eligible for this designation if, over a three-year period, they have more pedestrian fatalities than the national average of 20 annual pedestrian fatalities per city, or a pedestrian fatality rate greater than the national average of 2.33 per 100,000 people⁹. The Newark streets with the most fatalities have been Broad Street and Route 21, both with 6 pedestrian deaths since 2005¹⁰.

Most of Newark is laid out on a pre-1950s street grid that typically includes sidewalks and provides walkers with connections to the city's rail and bus service as well as numerous route choices between land use destinations. This section will describe the existing conditions of Newark's pedestrian facilities grouped by their use and recent city efforts to improve them.

To and From Downtown

SYSTEM DESCRIPTION

Downtown Newark contains most of the city's office space within an at-grade street grid lined with sidewalks. Pedestrians, however, are often pulled off the street by skywalks, or physically separated pedestrian bridges above street level, that link the Gateway Center office complex to Newark Penn Station and the Newark Legal Center across Raymond Boulevard.

The Broad Street/Washington Park area attracts large numbers of commuters to its office buildings, in addition to crowds coming for events at its cultural institutions, including the Newark Museum, New Jersey Performing Arts Center (NJPAC), and the Bears and Eagles Riverfront Stadium. Market Street, and Broad Street below Central Avenue, are major retail corridors with bustling sidewalks largely serving city residents.

Downtown Newark is within walking distance of two vibrant neighborhoods with strong identities: Ironbound and University Heights. The pedestrian connections between Downtown and these neighborhoods are important for supporting growth and improving the economic vitality of all three. These connections do, however, require the crossing of Broad Street to access the University Heights neighborhood, and Route 21 to access Ironbound. These two roadways have high traffic volumes and turning movements and can be a challenge for pedestrians.

RECENT CITY IMPROVEMENT EFFORTS

The Broad Street Streetscape project transformed a roadway primarily defined by its few amenities and pervasive jaywalking into a traffic-calmed urban boulevard. The Route 21 widening project provided new sidewalks and safer crossings at its intersection with Market Street. In 2007, the Prudential Center opened in Downtown Newark with sidewalks, streetscapes and pedestrian plazas. In addition, NJ TRANSIT recently provided direct pedestrian access between its platform level in Penn Station to the south side of Market Street.

Other efforts to enhance pedestrian facilities include the Newark Downtown District (NDD) Streetscape Improvement Project, which involves renovating up to 56 blocks to improve sidewalks, lighting, signage, horticulture, benches, and trash receptacles. The \$17.5 million project is directed by Newark Downtown District, and is funded primarily by the New Jersey Economic Development Authority, and also by the City of Newark, the Newark Urban Enterprise Zone, and PSE&G. As part of this effort, the Newark Wayfinding Project installed 130 pedestrian wayfinding signs in 2011 to encourage and ease walking in Downtown Newark by directing foot traffic to various destinations. The signs are strategically located throughout 4 districts: Downtown, University Heights, Downtown/Arts, and the Ironbound.

8. North Jersey Transportation Planning Authority analysis of crash data from New Jersey Department of Transportation Plan4Safety and the Rutgers Center for Advanced Infrastructure and Transportation.

9. Federal Highway Administration Safety Program, http://safety.fhwa.dot.gov/ped_bike/ped_focus/

10. North Jersey Transportation Planning Authority analysis of crash data from New Jersey Department of Transportation Plan4Safety and the Rutgers Center for Advanced Infrastructure and Transportation.

To and From Public Transit

SYSTEM DESCRIPTION

Safe pedestrian access to bus stops and light rail stations is a crucial link within Newark's pedestrian transportation system and was a topic of discussion at the Round 1 community workshop meetings for the Master Plan. Newark's comprehensive transit system contains 15 light rail stations and about 800 bus stops. In 2008, 21 percent of Newark's light rail riders reached their light rail station by bus, and nearly 50 percent of riders simply walked there. Combined, that means that two-thirds of Newark light rail riders rely on safe pedestrian access to bus stops and rail stations for their daily commute. The 2008 survey noted that 51 percent of riders left light rail stations by foot—more than twice the number of riders than for any other mode in the survey¹¹. The quality of pedestrian access to all these stations and stops, however, varies greatly. While many stations, like the Washington Street and Newark Penn Station Light Rail Stations, provide ADA access for patrons, others, like the Bloomfield and Park Avenue stations, do not provide any crossing accommodations near entrances.

Some of the older stations could use improvements to safety, security, and pedestrian accessibility. The City has recognized the need to improve pedestrian access between Newark Penn Station and the Central Business District in its proposed Downtown core triangle park access project. This same consideration is needed for the City's 800 bus stops and stations to ensure safe pedestrian access to and from transit throughout Newark. Systematically improving pedestrian access to and from these and other stops and stations will help fill in the gaps in Newark's pedestrian transportation system and support the city's transportation network overall.

RECENT CITY IMPROVEMENT EFFORTS

The Newark Penn Station Exterior Circulation Improvements Project will improve vehicular circulation and pedestrian conditions on Raymond Plaza East and West, Market Street and Raymond Boulevard. New Jersey Transit also recently built direct pedestrian access from Newark Penn Station train platforms to the south side of Market Street and the north side of Raymond Boulevard.

To and From School

SYSTEM DESCRIPTION

There are many challenges to walking safely to school in Newark. The City experiences rates of bicycle and pedestrian crashes that are higher than those for New Jersey as a whole¹². During multiple public workshops, school children and community members identified some of the following concerns when it came to walking or cycling to school: personal security, no safe place to store or ride bicycles, street litter, speeding vehicles, faded crosswalks, heavy traffic, blind spots, illegal parking, and heavy truck traffic in school zones, and few students using helmets when biking¹³.

Mapping the numerous incidents of pedestrian-vehicle conflicts that involved urban school-aged children was the impetus behind the University of Medicine and Dentistry New Jersey's Pedestrian Injury Prevention Partnership (PIPP) program. The program mapped over 15 children between the ages of 5 and 12 who were struck by a motor vehicle between 2000 through 2005¹⁴. The program continues to map pedestrian injury hot-spots throughout the city, installs safety cameras on city streets, conducts school-based pedestrian education classes, such as the Walk Safe curriculum in schools with pedestrian crashes, and organizes pedestrian safety-focused special events.

In addition, as Leigh Ann Von Hagen, Senior Research Specialist for the Alan M. Voorhees Transportation Center at Rutgers University noted in her Safe Routes to New Jersey's Disadvantaged Urban Schools report, 40 percent of the approximately 38,000 school-aged children in Newark live in poverty¹⁵. One of the Federal Highway Administration's (FHWA) main objectives for the Safe Routes to School program is to be accessible to diverse participants and schools, particularly those with fewer local resources and limited ability to afford new initiatives. This is important because school zones in low-income areas often have higher than average child pedestrian crash rates¹⁶. Von Hagen's research revealed that most of these crashes occur from 7 AM to 9 AM and from 2 PM to 7 PM, corresponding with times when children are most frequently outside¹⁷. Von Hagen also noted the shortage of crossing guards in Newark¹⁸.

11. NJ TRANSIT 1994 Newark City Subway and 2008 Light Rail Survey Results

12. Von Hagen, Leigh Ann. Safe Routes to New Jersey's Disadvantaged Urban Schools, 2009, p. 3.

13. Von Hagen, Leigh Ann. Safe Routes to New Jersey's Disadvantaged Urban Schools, 2009, p. 9.

14. Clancy, Sharon. Pedestrian Safety for Urban Children, University of Medicine and Dentistry New Jersey, New Jersey Medical School, Division of Trauma

15. Von Hagen, Leigh Ann. Safe Routes to New Jersey's Disadvantaged Urban Schools, 2009, p. 3.

16. Von Hagen, Leigh Ann. Safe Routes to New Jersey's Disadvantaged Urban Schools, 2009, p. 3.

17. Von Hagen, Leigh Ann. Safe Routes to New Jersey's Disadvantaged Urban Schools, 2009, p. 6.

18. Von Hagen, Leigh Ann. Safe Routes to New Jersey's Disadvantaged Urban Schools, 2009, p. 6.

RECENT CITY IMPROVEMENT EFFORTS

To address pedestrian safety for children, Newark launched several Safe Routes to School (SRTS) initiatives targeting ten difficult-to-walk-to schools. The schools were chosen for their proximity to some of the city’s most pedestrian-hostile intersections. Figure 31 shows the Safe Routes to School locations. Two SRTS grants include engineering studies and improvements, and education initiatives. Another safety initiative is the Walking School Bus pilot program steered by the East Coast Greenway.

To and From Recreation and Events

SYSTEM DESCRIPTION

The streets and sidewalks of Downtown Newark, just southwest of the Gateway Center, are routinely flooded with pedestrians heading to and from events at Prudential Center, home to the New Jersey Devils hockey team, which seats more than 18,000 people. The Broad Street/Washington Park area also draws large influxes of pedestrians onto its at-grade sidewalks and crosswalks thanks to cultural institutions including the Newark Public Library, Newark Museum, New Jersey Performing Arts Center (NJPAC), and the Bears and Eagles Riverfront Stadium. The Red Bull Arena in neighboring Harrison, NJ, generates high volumes of pedestrian traffic on the Jackson Street Bridge before and after each home game.

Newark’s waterfront master plan calls for a public park extending along the Passaic River from the Belleville border to the US 1&9 bridge. As part of the riverfront redevelopment, the US Army Corps of Engineers is currently addressing erosion and environmental degradation before launching into the second and third phases to develop 25 acres of park land including a riverfront walkway, plazas, landscaping, and lighting¹⁹.

RECENT CITY IMPROVEMENT EFFORTS

Before and during every event at the Prudential Center, Mulberry Street is closed between Edison Place and Lafayette Street for security reasons. This temporary pedestrian street and its crowds of pedestrians are managed by Newark Police traffic agents. Traffic agents are also stationed at key intersections to control vehicular and pedestrian traffic, particularly on Route 21 and Market Street.

Access to the Passaic Waterfront is currently limited by Raymond Boulevard, which, as a six-lane highway featuring crossing

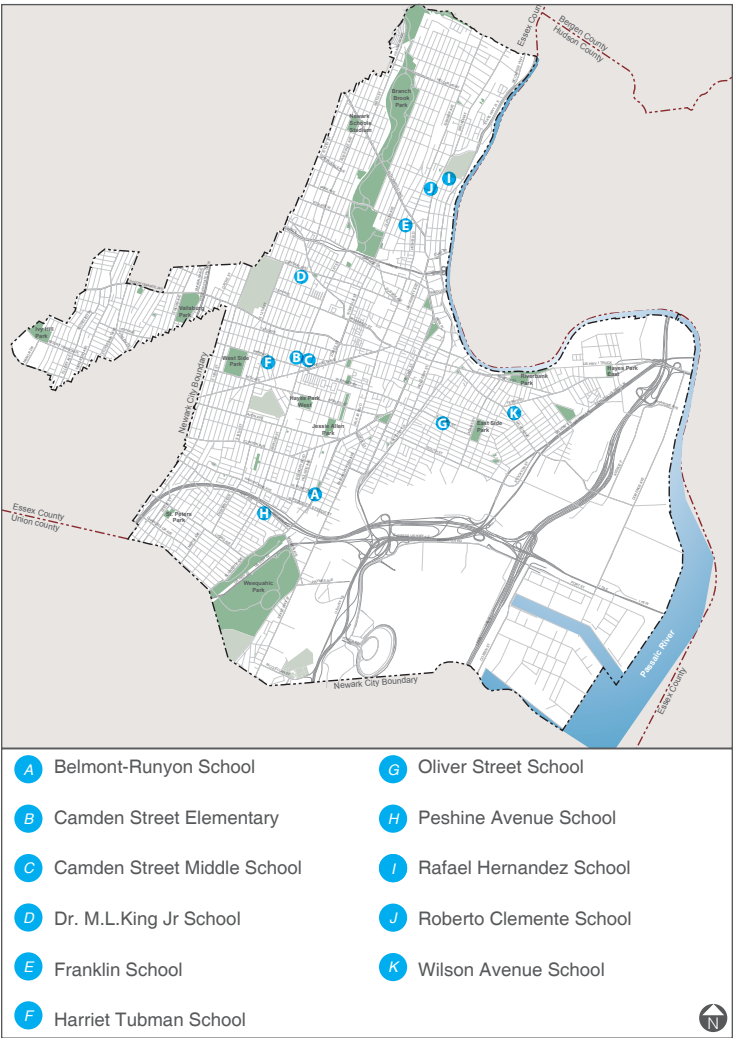


Figure 31 - Safe Routes to School

Source: City of Newark

distances over 100 feet in width, can be an intimidating thoroughfare to cross on foot. The State of New Jersey, recognizing Raymond Boulevard as a pedestrian barrier, sponsored a Raymond Boulevard Traffic Calming study. The study analyzed the traffic impacts of streetscaping, formalized pedestrian crossings, additional mid-block pedestrian crossings, decreased vehicle speeds, and a lane reduction along segments of the boulevard. The City of Newark intends to implement this improvement plan which will help define Newark’s pedestrianization efforts in the future.

NJDOT’s current Transportation Capital Program also includes the Newark Waterfront Community Access Study, which will consider a preliminary design for a pedestrian bridge over Route 21, possibly integrated with a building, linking the downtown area with the Passaic River waterfront²⁰.

19. New Jersey’s Long-Range Transportation Plan Urban Supplement for the City of Newark p. 50

20. New Jersey’s Long-Range Transportation Plan Urban Supplement for the City of Newark p. 50

Within Neighborhoods

SYSTEM DESCRIPTION

Many neighborhoods within Newark feature safe, vibrant streetscapes for residents. University Heights can be teeming with students going to and from school buildings between classes, though many of these students and college employees commute to the area by car. The Ironbound's thriving storefronts and sidewalks attract shoppers throughout the region, while residential enclaves like Forest Hills contain staid sidewalks along near-suburban streets.

In comparison, industrial areas of Newark Liberty International Airport and Port Newark/Elizabeth discourage walking altogether with inconsistent pedestrian facilities and physical barriers like multi-lane highways. Even in residential neighborhoods, the quality and consistency of sidewalks, intersections, and general streetscapes ranges greatly. Inaccessible or uncomfortable sidewalks not only discourage pedestrians from walking within and between neighborhoods, but create fundamental mobility barriers for vulnerable pedestrians, like seniors, those with disabilities, and school children.

RECENT CITY IMPROVEMENT EFFORTS

The City is attempting to address these streetscape inconsistencies through a Citywide Streetscapes Program for commercial corridors in all five wards to improve the conditions and the overall pedestrian experience. There are streetscape improvement projects recently completed, under construction, or in design on the following corridors (shown in Figure 32).

- Ferry Street
- Bloomfield Avenue/ Lower Broadway
- Mount Prospect Avenue
- Clinton Avenue
- South Orange Avenue
- Irvine Turner Boulevard

The City has also conducted traffic calming studies in the west and central wards to identify streets in need of safety improvements.

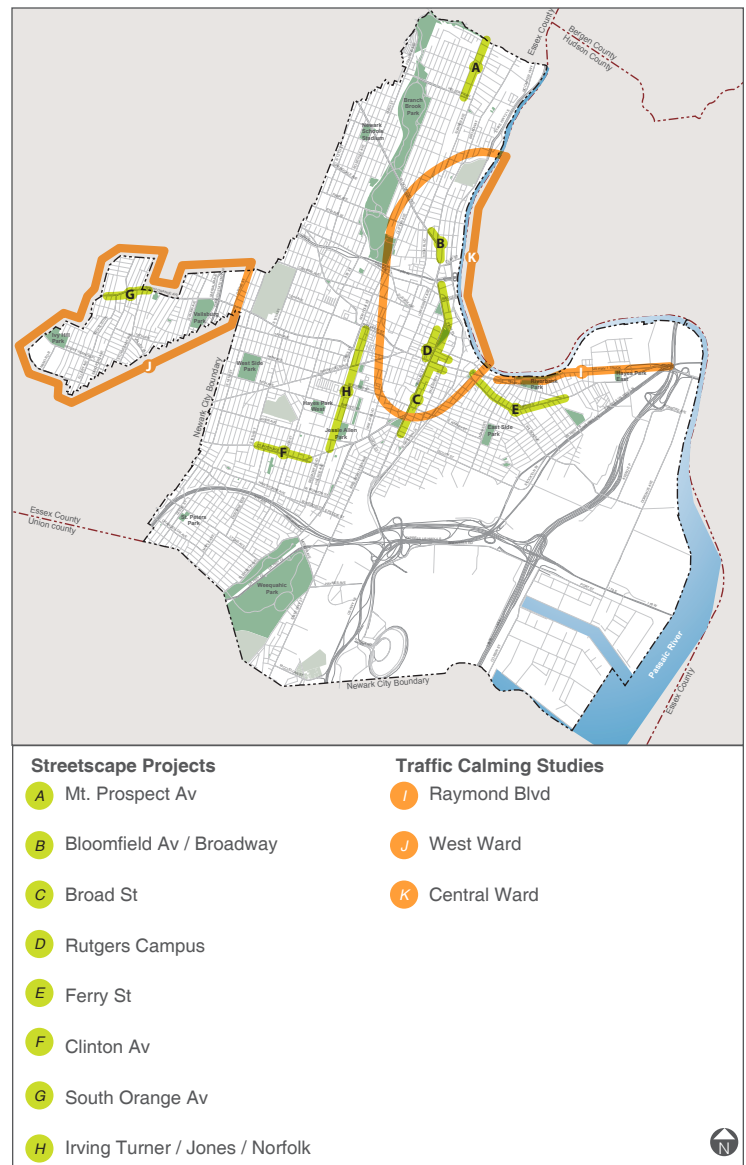


Figure 32 - Streetscape Projects and Traffic Calming Studies

Source: City of Newark

In addition, the Rutgers Master Plan calls for creating distinct gateways and pedestrian connections to link the university campus with downtown and surrounding neighborhoods. NJIT has a new campus landscape master plan, which includes proposals to improve pedestrian circulation and to provide gateway signage on all four sides of the campus. It also proposes converting sections of Summit and Bleeker Streets into pedestrian paths²¹.

21. New Jersey's Long-Range Transportation Plan Urban Supplement for the City of Newark p. 51

Americans with Disabilities Act (ADA) Compliance

Local jurisdictions must ensure that the facilities they build or alter are accessible to people with disabilities. Newark's mature street grid and sidewalk network creates many challenges for compliance with existing and forthcoming ADA compliance regulations.

This issue is even more critical now that new Public Rights Of Way Accessibility Guidelines (PROWAG) are pending implementation. PROWAG regulations cover access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, parking, and other components of public rights-of-way. These guidelines will require that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety afforded the public generally is available to pedestrians with disabilities. As an individual city, Newark is required to follow PROWAG guidelines; any failure to do so could render the municipality vulnerable to potentially financially devastating lawsuits. Newark will need to address the accessibility challenges of its mature pedestrian transportation system with an ADA transition plan.

Car Sharing

Car Sharing is a form of car rental for short periods of time on an as-needed basis. Cars can be rented by the minute, hour, or day. People can have access to a car without ownership or without the need to drive their car to work. Car rental businesses provide car share services to users who are registered members who make their own reservations and who pickup/return the vehicles that are located in designated parking spots within the service area. Car share programs are located in dozens of cities across the country and hundreds of college campuses. According to Innovative Mobility, as of July 2011, 26 American car sharing programs claimed 560,000 members sharing 10,019 vehicles.

In the City of Newark, the car share company Zipcar provides 13 vehicles for rent at the following locations:

- 986 Raymond Boulevard: 5 vehicles
- Clifton Avenue between 7th and 8th Avenue: 2 vehicles
- MLK Drive and 7th Avenue: 2 vehicles
- Edison Place between Broad Street and Mulberry: 4 vehicles

A number of benefits are associated with car sharing. Personal benefits include financial savings (car sharing allows a person to have access to a car without the cost of ownership), improved accessibility, and mobility. Public benefits include a reduction in vehicle trips. Studies have shown that car sharing leads to a reduction in car usage by 50 percent. This reduces congestion and environmental pollution.

Taxis

The Taxicab Commission establishes and enforces safe standards for taxicabs that are licensed to operate in the City of Newark through registration and inspection. Approximately 1,200 taxis and livery vehicles operate in Newark. About 200 of these are only permitted to make trips to or from Newark Liberty International Airport. Other taxis make dispatch trips, or get fares at either the airport or at Newark Penn Station. Medallion cabs use meters to determine the cost of a trip. Livery vehicles can only charge flat rates. The City of Newark prohibits cruising by livery vehicles; however, medallion cabs are allowed to pickup street fares. There is currently an initiative to outfit Newark's taxis with technology that allows them to accept credit card payments and display GPS-based maps of the taxi's location, similar to the technology used by taxis in New York City.

For taxis that pick up fares at Newark Liberty International Airport, Manhattan is a major destination. For taxis that pick up fares at Newark Penn Station, major destinations include East Orange, the Central Ward, and colleges in the University Heights area.

Freight

Newark is a major center of domestic and international goods handling. Port Newark/Elizabeth accommodates most of the region's maritime shipping, and is the largest handler of international shipping on the East Coast. Most waterborne goods are shipped to and from the port by trucks using the regional road network. However, an increasing portion of waterborne goods destined for areas outside of the region is now transferred directly to and from railroad cars and trains. The network of land, air and sea transportation facilities in eastern Newark has been dubbed the "International Intermodal Corridor", within federal Transportation Efficiency Act (TEA-21) legislation and subsequent reauthorizations.

Rail networks in the area generally have an east-west orientation, mainly to serve "landbridge" movements, e.g., goods shipped from the Pacific Rim to the west coast of the United States and then moved by rail to the East Coast. Three railyards handling such traffic (Oak Island Yard, Waverly Yard, and Brills Yard) are located within the city. Rail movements serving the New Jersey/New York metropolitan area from New England are handled via the rail bridge at Selkirk, NY, in the Albany area, far north of Newark.

North south freight movement along the Eastern Seaboard is handled primarily by truck. This is mainly a function of the price and flexibility advantages of the truck mode over shorter distances compared to east-west movements across North America. However, with the acquisition of Conrail by Norfolk Southern and CSX in the late 1990s, the Northeast now enjoys competitive freight rail service through a network that covers the entire eastern United States North-south freight rail movements represent strong growth potential for both of the Class I railroads.

The movement of air cargo at Newark Liberty International Airport has been increasing rapidly, with tonnage more than tripling since 1985. This trend can be attributed to the overall growth in the air freight industry, to the higher relative competitive advantage of the airport itself for certain types of commodities, such as overnight small parcel deliveries (FedEx and UPS), and the long-term transition in the air cargo industry from air freighter service at select cargo hubs to "belly cargo", transported in the cargo holds of passenger aircraft.

Truck Routes

Truck traffic entering and leaving the industrial district of Newark must travel on routes designated by municipal ordinance or state regulations to reach the regional highway system (see Figure 33).

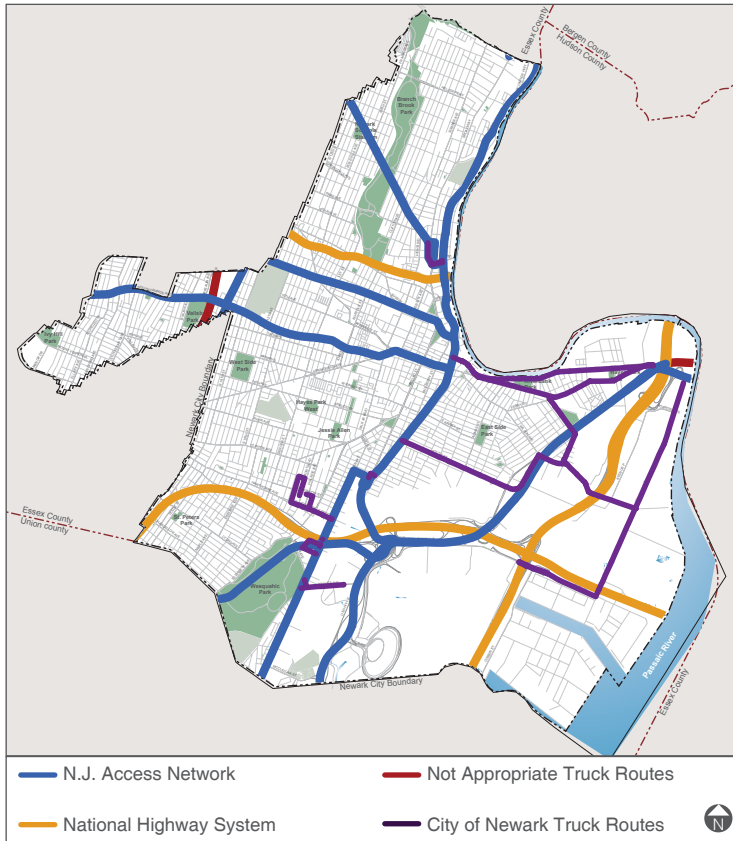


Figure 33 - Designated Truck Routes

Source: City of Newark

Several major truck corridors run through Newark. The New Jersey Turnpike (Interstate 95) runs from the Delaware Memorial Bridge in Pennsville to the George Washington Bridge in Fort Lee. There are two exits in Newark and one nearby in Elizabeth. Exit 14 services Interstate 78 as well as the Hudson County Extension over the Newark Bay Bridge which leads to the Holland Tunnel, Exit 15E serves Truck Route 1&9 and Doremus Avenue, and Exit 13A in Elizabeth serves North Avenue and the southern end of Port Newark – Elizabeth. Exits 13A and 14 serve Newark Airport.

Route 1&9 runs from the convergence of US-1 and US-9 in Woodbridge to the George Washington Bridge in Fort Lee via the Pulaski Skyway. For most of its length the roadway is a divided highway (notably through Elizabeth and along Tonnelle Avenue in Hudson County), but it is a limited-access road for its entire length in Newark. Route 1&9 serves Newark Liberty International Airport, Port Newark-Elizabeth via Port Street, and key industrial areas along Doremus Avenue. Trucks are prohibited on the Pulaski Skyway for safety reasons, so between the southern terminus of the Skyway and Tonnelle Circle in Jersey City trucks

operate on a special Truck Route 1&9 across the Passaic and Hackensack Rivers.

Route 21 runs north from Interstate 78 at Newark Liberty International Airport through Downtown Newark (as the McCarter Highway) and parallels the Passaic River to US-46 and the Garden State Parkway in Clifton.

Interstate 280 runs from Interstate 80 in Parsippany to the New Jersey Turnpike (I-95) in Kearny. It is one of the truck access routes to CSX's South Kearny Yard for intermodal services. Newark exits include Exit 13 for Roseville, Exit 14 for Clifton Avenue, and Exit 15 for Downtown Newark, Broad Street, and Route 21. Exit 16 in Harrison contains entrance ramps which are utilized by Newark-based traffic via Harrison Avenue and the Bridge Street Bridge.

The City of Newark Engineering Department has a Truck Route Signage Project that establishes a designated truck roadway network and links it to the regional highway system. The major portion of the truck route system is located in the eastern section of Newark, in which McCarter Highway and Route US-1&9 play a critical role. Other key truck routes include: Raymond Boulevard, Clay Street, Doremus Avenue, Port Street, Avenue L, South Street, Miller Street, Frelinghuysen Avenue, Haynes Avenue, and Meeker Avenue.

The New Jersey Department of Transportation (NJDOT) is currently undertaking 11 independent projects designed to improve access to the major freight facilities and industrial sites in Newark, Elizabeth, Harrison, Kearny, Jersey City, and elsewhere. Collectively these projects are referred to as the Portway Phase 1. Some of these projects have been completed, including a rehabilitation of the Doremus Avenue Bridge over Oak Island Yard in Newark, a widening of Doremus Avenue from Wilson Avenue to Raymond Boulevard in Newark, and a reconfiguration of the Tonnelle and Charlotte traffic circles in Jersey City. A replacement of the viaduct on US-1&9 over St. Paul's Avenue in Jersey City is currently under construction, and a replacement of the Route 7 WittPenn Bridge between Jersey City and Kearny began in 2011. An extension of Truck Route US-1&9 from St. Paul's Avenue to Secaucus Road in Jersey City and a reconfiguration of Pennsylvania Avenue and Fish House Road in Kearny are in their final design stages and NJDOT is conducting feasibility studies to replace Exit 15E of the NJ Turnpike and the interchange between Doremus Avenue and Truck Route 1&9 in Newark, build a new Passaic River crossing between Kearny and Newark in order to improve the connections between the NJ Turnpike and Truck 1&9, and replace the Central Avenue interchange with Truck Route

US 1&9 in Kearny. In addition, NJDOT developed the Portway Extensions Concept Development Study to address additional needs that were not addressed in Phase 1. Figure 34 shows representative projects from the Portway initiative.

The Port Authority of NY & NJ has also been working to improve roadway access to the various facilities that collectively comprise the Port Newark-Elizabeth Marine Terminal complex. McLester Street is being widened, and roadway improvements are being done to improve the southern access route to the port complex via North Avenue and Exit 13A of the New Jersey Turnpike. The New Jersey Turnpike Authority has undertaken several major projects at Exit 13A in Elizabeth, Interchange 14 in Newark, and Exit 14A in Bayonne. Each of these projects, which will provide substantial benefits to overall vehicular traffic flow, will also have tangible benefits for truck movements to and from the industrial sites adjacent to each exit (Newark Airport and Port Newark/Elizabeth via exits 13A and 14, and the Bayonne peninsula via exit 14A).

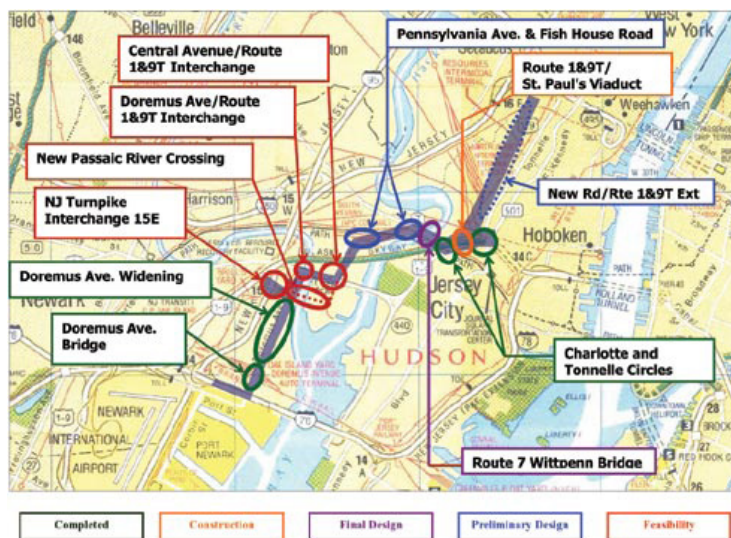


Figure 34 - Portway Projects

Source: NJDOT Portway Projects;
<http://www.state.nj.us/transportation/freight/portway/projects.shtm>

Truck Volumes

The City of Newark experiences a large amount of truck traffic due to a variety of factors, including its proximity to Newark Liberty International Airport, Port Newark/Elizabeth, the major highways that run through Newark, and a combined total of over 600 manufacturing and warehousing/distribution buildings that are located within the city's borders.

According to the North Jersey Transportation Planning Authority's (NJTPA) 2040 Freight Industry Level Forecasts Study, segments of the New Jersey Turnpike (I-95) carry as many as 15,000 trucks per day. Parts of I-78 west of I-95 carry up to 12,000 trucks per day. Daily truck volumes on Route 1&9 and Route 21 exceed 5,000 on some segments.

These numbers are forecasted to grow by 2040. The volume of trucks traveling on the New Jersey Turnpike is expected to increase by 40 percent, or 6,000 trucks per day. Segments of Routes US-1&9 and I-78 west of the I-95 could carry 2,000-3,000 more daily trucks in the future. Truck volumes on sections of I-280, US-22, and NJ-21 and NJ-24 could double to nearly 10,000 trucks per day. Figure 35 shows forecasted truck volume in 2040 in the City of Newark.



Figure 35 - Commodity Truck Flows in Newark, 2040

Source: IHS Global Insight, NJTPA Regional Transportation Model-enhanced (NJRTM-E) Dun & Bradstreet (2010); NJTPA 2040 Freight Industry Level Forecasts; <http://www.njtpa.org/Plan/Element/Freight/2040FreightIndustryLevelForecasts.aspx>

Freight Rail

The Newark area serves as a major convergence point for several important freight railroad lines. Most of these lines in Newark are owned by the Conrail Shared Assets Operations (CSAO), which is a company held jointly by CSX Transportation and the Norfolk Southern Railway. The main route is the Lehigh Line, which runs southwest from the Oak Island Yard just north of Newark Airport to Bound Brook in Middlesex County (the Lehigh Line continues westward to Allentown, PA, but is owned by Norfolk Southern west of Bound Brook). Over 42 freight trains use the Lehigh Line daily and include automotive, intermodal, and manifest (mixed freight) trains. Recently, the line was double-tracked from Canadian Pacific (CP) Bound Brook east to CP Potter in Edison in order to relieve congestion heading into the major freight terminals in and around Newark.

The Chemical Coast Secondary, also owned by CSAO, is a branch line that begins east of Oak Island Yard (via the Oak Island Running Track) and serves Port Reading Yard and the Bayway Refinery. It parallels Arthur Kill and it ends in Woodbridge at a connection with NJ Transit North Jersey Coast Line. The line also runs past the Port Newark-Elizabeth Marine Terminal complex, and a project was undertaken to eliminate congestion with intermodal trains at the port and trains serving customers along the Chemical Coast Secondary.

The Passaic and Harsimus (P&H) Line, also owned by CSAO, serves as a connection between the Lehigh Line and the NS and CSX rail assets east of the Hackensack River. It branches from Amtrak’s Northeast Corridor near Newark Airport and connects to Oak Island Yard. From there, it runs parallel to US-1&9, across the Passaic River and through the Pacer Stacktrain Terminal at South Kearny Yard between NJ TRANSIT’s Morris and Essex Lines and the PATH’s Newark to World Trade Center Line. It crosses the Hackensack River on the Harsimus Branch Lift Bridge and runs east to Journal Square.

Oak Island Yard is a major freight yard on Newark Bay and connects the Lehigh Line with the Chemical Coast Line, Passaic and Harsimus Line, and the Lehigh Valley Line Bridge (Conrail’s National Docks Secondary) that connects to the ports in Bayonne and the CSX River Line. The yard is divided into an engine house, a classification yard, a maintenance shop, and an unloading facility for autos. Since the start of 2012, Approximately 800 cars per day were classified at Oak Island with a maximum of almost 1,300 in one single day²². Today, there are 10 reception tracks, nine departure tracks, and 30 classification tracks, as well as

an automatic hump. The Doremus Avenue Auto Terminals are adjacent to Oak Island Yard and are used by Norfolk Southern trains. Terminal I has a capacity of 2,675 vehicles and has 102 railcar spots, while Terminal II has a capacity of 5,700 vehicles and has 72 railcar spots.

Canadian Pacific Railways (CP Rail) operates an intermodal terminal at Oak Island Yard, with access provided via the Lehigh Line from the west through a trackage rights agreement with Norfolk Southern and Conrail. Recently bypasses of Oak Island Yard were built for traffic connecting from the Lehigh Line to the port district and the P&H Line.

Portside Yard runs parallel to the Chemical Coast Line in Elizabeth, just south of the border with Newark, and connects to the Oak Island Yard via the Portside Running Track. The track continues south to the Bayway Refinery.

The Port Authority of NY & NJ owns intermodal rail yards at or adjacent to each of its major container terminals, referred to as ExpressRail. There are three ExpressRail facilities currently in operation, including Staten Island (on-dock), Elizabeth (on-dock), and Newark (near-dock). A fourth ExpressRail terminal is envisioned as part of the Port Jersey-Port Authority Marine Terminal in Bayonne. Collectively, these intermodal rail yards handled 424,144 containers in 2011, nearly nine times what they did in 1992, the first full year the original ExpressRail terminal in Elizabeth was operational. Table 9 shows ExpressRail lifts from 2001-2011.

Year	Total Rail Lifts	% Change
2001	200,844	12.8%
2002	230,243	14.6%
2003	232,867	1.1%
2004	283,529	21.8%
2005	303,032	6.9%
2006	338,884	11.8%
2007	358,043	5.7%
2008	377,827	5.5%
2009	308,131	(18.4%)
2010	376,770	22.3%
2011	424,144	12.6%

Table 9 - ExpressRail Lifts (Loaded & Empties), 2001-2011
Source: Port Authority of New York and New Jersey 2011 Trade Statistics; <http://www.panynj.gov/port/pdf/port-trade-statistics-summary-2001-2011.pdf>

22. Conrail Cars On Hand January 1, 2012-April 20, 2012; <http://www.conrail.com/briefing.htm>

ExpressRail Newark is a two track yard located north of the Portside Yard operated by the Port Newark Container Terminal (PNCT). It mostly serves CSX trains operating to and from the Midwest; there is currently no Norfolk Southern service. It is a “near-dock” facility located on the west side of Corbin Street across from PNCT. Construction of a new road bridge over Corbin Street to provide direct access to PNCT began in 2011 and is scheduled to be completed in December 2012.

ExpressRail Elizabeth is an 18-track yard, located in between the Maher and APM Terminals in Elizabeth, that connects to the Portside Yard. The Maher and APM Terminals operate the yard jointly under the Millennium Marine Rail banner. Norfolk Southern and CSX Transportation are the main carriers which utilize these yards, and the Canadian Pacific Railway runs some services jointly with Norfolk Southern via Allentown, PA. Service runs to most of the continental United States and to Eastern Canada. Recently, a second lead track was added to allow trains to enter and exit simultaneously.

Recently, the Portside Yard was connected to the ExpressRail Newark and ExpressRail Elizabeth and is thus used as a staging facility for the two yards.

FAPS Inc. operates the Marine On-Dock Auto Rail Terminal at Building 317 which includes an auto loading ramp for trains. There is track capacity for 48 auto rail cars.

The Brills Yard is a small rail yard owned by CSAO that runs on a spur north of the Oak Island Yard between US 1&9 and the New Jersey Turnpike and mostly handles solid waste. It also serves as an access point to several businesses in the east Ironbound section of Newark and along Doremus Avenue.

The CSAO also owns the Parkview Yard which is a spur off the Lehigh Line just west of the crossing over the Northeast Corridor, although it can only be accessed from the west. This yard serves several businesses along Frelinghuysen Avenue in Newark.

Norfolk Southern operates the E-Rail Terminal which serves as an intermodal facility for rail traffic to the Midwest. This terminal is just south of the Port Newark-Elizabeth Marine Terminal on Third Street in Elizabeth and is accessible from the Chemical Coast Secondary.

Other major yards in the region include CSX's South Kearny Yard and Norfolk Southern's Croxton Yard in Secaucus.

There have been a number of improvements to the freight rail network in the port district in recent years in order to better accommodate the different needs of each railroad. One of the most notable projects was CSX's Liberty Corridor Freightway, which improved vertical clearances along the National Docks Branch through the Bergen and Waldo Tunnels in Jersey City. This has enabled full double-stack intermodal trains to move to and from the marine terminals in Bayonne, Newark/Elizabeth, and Staten Island via the CSX River Line, and is part of CSX's National Gateway initiative, which is aimed at improving access between East Coast ports and Midwest intermodal hubs.

Norfolk Southern has its own major effort for expanding its business along key intermodal corridors. The Crescent Corridor initiative is a series of projects to improve intermodal connectivity between the Northeast and major hubs in the Southeast and Gulf Coast regions. This long-term program will help promote growth in north-south rail intermodal markets that had been largely untapped when Conrail was the predominant Class I carrier in the Northeast.

Figure 36 shows freight railroads and rail yards in the Port area.



Figure 36 - Rail Facilities in New York / New Jersey Area

Source: Port Authority of New York and New Jersey Express Rail map; <http://www.panynj.gov/port/express-rail.html>

Port Facilities

Most of the marine freight handled in Newark goes through the Port Newark-Elizabeth Marine Terminal complex, which is situated in both Newark and Elizabeth and is managed by the Port Authority of New York & New Jersey as part of the Port of New York and New Jersey, which also includes the Howland Hook Marine Terminal on Staten Island, the Global Marine Terminals in Bayonne, and the Brooklyn Marine Terminal. The Port Authority serves as the owner and landlord of the port facilities, with terminals run by private operators through long-term lease agreements.

In 2010, these ports combined to import 21 million metric tons of general cargo worth \$104 billion and 40 million metric tons of bulk cargo worth \$24 billion, while exporting 11 million metric tons of general cargo worth \$42 billion and 9 million metric tons of bulk cargo worth \$5 billion²³. Table 10 shows the containers and twenty-foot equivalent units (TEUs) handled by the in the Port of New York and New Jersey from 2001-2011. Port Newark-Elizabeth handles approximately 3,700 vessels annually. The top imports handled by Port Newark / Port Elizabeth include furniture, women's and infant's clothing, and beer. The top exports include paper, automobiles, and scrap metal. The top bulk commodities at Port Newark-Elizabeth include scrap metal, steel, petroleum, salt, cement, and edible oils.

Year	Containers	TEUs
2001	1,953,006	3,316,276
2002	2,200,922	3,749,014
2003	2,382,639	4,067,811
2004	2,620,113	4,478,480
2005	2,800,007	4,785,318
2006	2,987,719	5,086,070
2007	3,099,644	5,299,105
2008	3,068,935	5,265,053
2009	2,652,209	4,561,527
2010	3,067,395	5,292,020
2011	3,197,016	5,503,485

Table 10 - Port of New York / New Jersey Containers, TEUs, 2001-2011

Source: Port Authority of New York and New Jersey 2011 Trade Statistics;
<http://www.panynj.gov/port/pdf/port-trade-statistics-summary-2001-2011.pdf>

The port has several on-site tenants and crane facilities. On the Newark side, the Port Newark Container Terminal (PNCT) has nine cranes and four 50-foot deep berths, with a capacity of over one million TEUs annually. On the Elizabeth side, there are two container ports: the Maher Terminal which has 16 cranes, eight 50-foot deep berths and the only cooperative chassis pool in the Port District, and the AP Moller-Maersk (APM) Terminal, which has 15 cranes and three 50-foot deep berths. As with the PNCT, both of these facilities are international container terminals. Figure 37 shows locations of the ports terminals in the New York/ New Jersey area.



Figure 37 - Ports Terminals of New York / New Jersey

Source: Port Authority of New York and New Jersey;
<http://www.panynj.gov/port/ocean-shipping-schedules.cfm>

23. Port Authority of New York and New Jersey 2012 Port Guide; <http://seaportsinfo.com/panynj/>

In addition, The Port of New York and New Jersey handles the most automobile imports and exports of any facility in North America, importing 366,768 vehicles and exporting 283,901 vehicles in 2011. Auto facilities are located at the Auto Marine Terminal in Jersey City and the Port Newark/Elizabeth Marine Terminal. At Port Newark, FAPS, Inc. maintains over 250 acres of vehicle processing space and operates out of various buildings in the northern part of Port Newark. In addition, several liquid and dry bulk distribution companies have cargo facilities on site at Port Newark. Figure 38 shows the facilities located at the Port of Newark-Elizabeth.

Vessel Access Issues

All oceangoing vessels traveling to and from Port Newark/Elizabeth must pass under several bridges along the channels that access the port complex. The vast majority of these travel to the port from the Atlantic Ocean via New York Bay, the Kill Van Kull (between Bayonne and Staten Island), and Newark Bay. Vessels on this route pass under the Verrazano Narrows Bridge in New York Bay and the Bayonne Bridge, which crosses over the Kill Van Kull. The Verrazano has a vertical clearance of 228 feet at mean high water, while the clearance under the Bayonne Bridge is 151 feet.

The Panama Canal Expansion Project is currently underway to construct a third shipping lane capable of accommodating the next generation of “post-Panamax” container ships, which are capable of transporting up to 13,000 TEUs. This project is expected to be completed by 2014. Today, these ships are too large to reach the Port Newark Container Terminal, Maher Terminal, APM Terminal, and the New York Container Terminal (in Staten Island) west of the Bayonne Bridge. To address these problems, the Port Authority has undertaken a massive \$2 billion harbor dredging project that is expected to be completed by December 2013 to coincide with the completion of the Panama Canal Expansion Project. The project will deepen major shipping channels to a depth of 50 to 53 feet²⁴. As of 2005, Newark Bay channel was dredged to 45 feet. Notably, the Kill Van Kull was dredged to 50 feet as of September 2011. Other important channels which were either recently dredged or have projects underway include the Ambrose Channel in Lower New York Bay, the Anchorage Channel in the Narrows, and the Elizabeth and South Elizabeth Channels at Port Newark/Elizabeth.

In addition, the Port Authority of NY & NJ commissioned the Army Corps of Engineers to study replacing or raising the Bayonne Bridge due to an increase in ships’ air draft when the Panama Canal expansion is complete. In December 2010, the Port Authority voted to raise the vertical clearance of the Bayonne Bridge to 215 feet and have allocated \$1 billion to the project to be completed by 2016. This project will have major implications for the City of Newark because it will help the Port Newark/Elizabeth complex maintain and strengthen its competitive position with other East Coast ports.

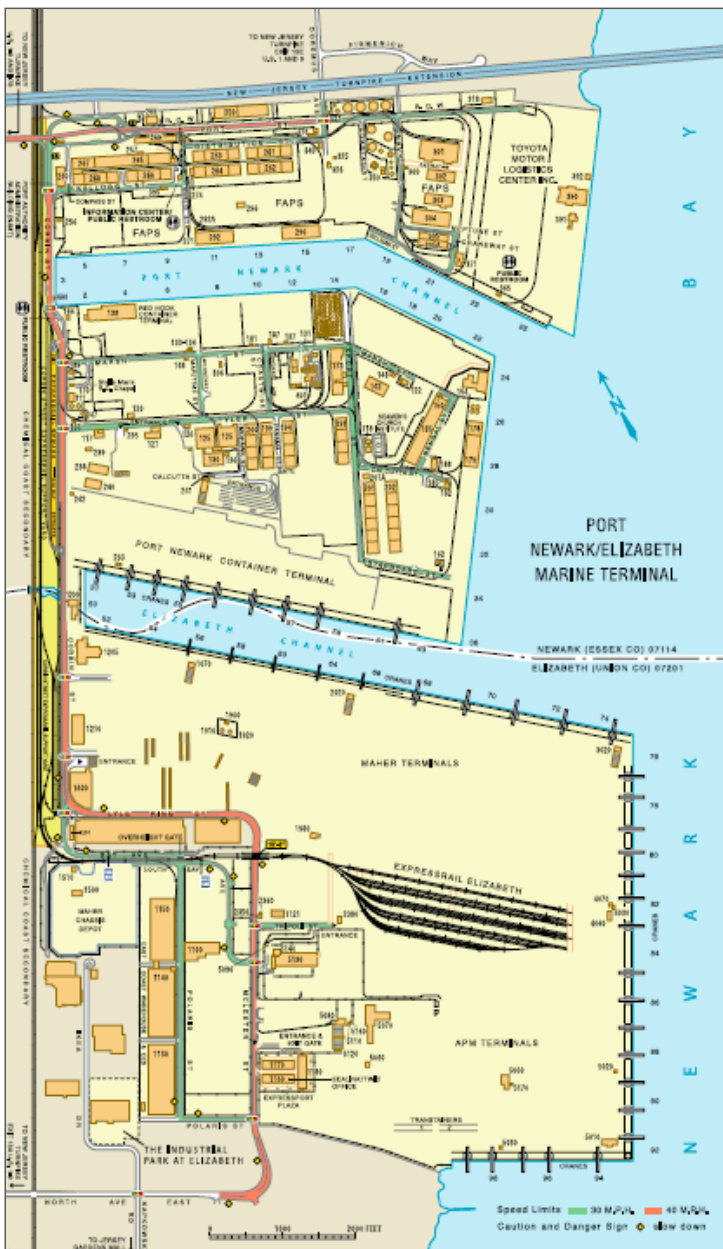


Figure 38 - Port of Newark-Elizabeth Facilities

Source: Port Authority of New York and New Jersey;
http://seaportsinfo.com/panynj/portfacilities/?page=portnewark_elizabeth

24. United States Army Corps of Engineers 50ft Deepening Navigation Project; <http://www.nan.usace.army.mil/project/newjers/factsh/pdf/nynj.pdf>

Air Cargo

Newark Liberty International Airport, which is operated by the Port Authority of NY&NJ, handled 858,594 short tons of cargo in 2010, making it the 9th busiest cargo airport in the nation and the 23rd busiest in the world. While air cargo through Newark has declined by 21% since 2000, its global rank has declined only slightly. Historical air cargo traffic at Newark Airport from 2000 to 2010 is illustrated in Table 11.

Year	Total Cargo (tons)	% Change from Prior Year	Global Rank
2000	1,082,406	(1.0)	18
2001	795,584	(26.5)	20
2002	850,050	(5.0)	19
2003	874,641	2.0	21
2004	984,838	2.4	20
2005	949,933	(3.5)	21
2006	969,287	2.0	22
2007	963,794	(0.6)	22
2008	887,053	(8.0)	22
2009	779,642	(12.1)	23
2010	855,594	9.8	23

Table 11 - Newark Liberty International Airport Air Cargo, 2000-2010

Source: Airports Council International; www.airports.org

At Newark Airport, Federal Express, UPS, and Continental Airlines served as the three largest cargo carriers in 2010. The airport has freight related buildings in both the north and south areas of the facility. The south area has a large FedEx complex. Newark Airport is FedEx’s third largest cargo hub and is the second largest tenant at the airport. UPS and the US Postal Service are located along Brewster Road. In the north area, there are several cargo buildings maintained by various airlines. Figure 39 illustrates cargo facilities at Newark Liberty International Airport.

Newark Airport has benefited from some major changes in the air cargo industry, partly at the expense of its nearby competitors. It primarily serves domestic air cargo, but has captured a growing share of international cargo as air carriers have slowly shifted from an “air freighter” business model to a “belly cargo” model where more and more cargo is moved in the cargo holds of passenger aircraft. As a result of this transition, air cargo activity has become dispersed among many different airports, and cargo services at traditional air cargo hubs such as JFK Airport have faced competitive pressure from airports that serve primarily as passenger hubs. Newark Airport remains a major activity center in the New York metropolitan region for overnight small parcel carriers such as FedEx and UPS.



Figure 39 - Newark Liberty International Airport

Source: Port Authority of New York and New Jersey; <http://www.panynj.gov/air-cargo/ewr-map.html>

NEWARK LIBERTY INTERNATIONAL AIRPORT (EWR) PASSENGER FACILITIES

Newark Liberty International Airport (EWR) is one of the New York City region's three major airports and is a key component in the economy of the City of Newark. About \$19 billion in economic activity in the greater New York City region can be attributable to the airport, and more than 140,000 jobs in the region are directly or indirectly related to airport activity. The airport was originally opened in 1928, and it grew considerably in the decades after World War II after the Port Authority of New York and New Jersey took over operations of the facility in 1948. The airport is owned and operated by the Port Authority, with about two-thirds of the facility (including Terminals B and C and the North Cargo Area) located in Newark and the remainder (including Terminal A and the South Cargo Area) in Elizabeth.

Annual passenger volumes are somewhat lower than their mid-2000s peak, but have consistently exceeded 30 million for most of the last 15 years. A recent study on the airports in the New York City region, conducted by the Regional Plan Association (RPA), indicated that Newark Airport Operations are limited by a number of airside capacity constraints, including: (1) inability to operate its two north-south runways independently due to their 950-foot separation; (2) operational constraints related to the intersection of both north-south runways by the cross-wind runway; (3) vertical obstructions at Port Newark/Elizabeth that affect the cross-wind runway operations under some conditions; and (4) taxiing movements between the terminals and the easternmost north-south runway that require aircraft to cross the other north-south runway. Landside operational constraints at the airport include: (1) limited space for cargo facility expansion; (2) slow speed and limited capacity for growth of the AirTrain system; (3) some highway congestion, which is expected to worsen over time; and (4) internal terminal constraints related to passenger screening.

Based on the findings of the RPA study, the Port Authority of NY and NJ has embarked on a regional airport capacity study of its own. This study involves a more detailed assessment of airside and landside operations at the agency's three airports, along with passenger and cargo forecasts. A number of alternatives for terminal and runway improvements will be examined for each airport. This study will likely have enormous implications for transportation and land use in the vicinity of Newark Airport, particularly if dramatic changes are proposed for runway configurations, airport terminals, and landside road and transit infrastructure.

Parking

The supply of on street and off street parking in Downtown Newark is heavily utilized. In some areas, the demand exceeds the supply. Development professionals, and financial consultants to the development industry and the City of Newark, have reported that many business patrons and office workers demonstrate a hesitancy to walk along Newark's streets. This is a trend that goes back to the construction of the Gateway pedestrian concourse and continues today with the provision of shuttle bus services from Newark Penn Station by several of Newark's major employers. Many merchants believe that their businesses are affected because patrons cannot always park near their establishments. Routinely, new and redeveloped office space tenants in Downtown Newark request parking for their employees.

The continual increase of parking spaces throughout the city has been a factor in changing the commuting pattern over the past 40 years. This trend of more commuters driving into the city and fewer taking mass transit is in direct opposition with Newark's goals and vision. Despite the existence of robust local and regional transit infrastructure, there is significant under-performance and underutilization of this system due to the provision of significant quantities of parking.

- 1970 – 70,000 workers in the Downtown – 50% arrived via transit
- 2000 – 52,000 workers in the Downtown – 26% arrived via transit

(not inclusive of the 30,000 student population)

Existing Supply and Demand

ON-STREET PARKING

Parking on city streets in Downtown Newark is currently in high demand. About 1,500 metered spaces are located in Downtown Newark, mostly on Broad Street and Mulberry Street and on the cross streets between Hill and Fulton Streets. It is likely that each metered space could turn over four times within an eight hour timespan, given existing parking patterns and enforcement. Thus, some 6,000 vehicles per day can be currently accommodated. Adding to this supply are unmetered curbside spaces on blocks adjoining the metered streets.

Within Downtown Newark, throughout the business day, metered parking spaces and spaces on blocks adjacent to the metered blocks are almost completely utilized. This utilization level continues on many blocks into the evening, especially near restaurants, retail and entertainment establishments, and on residential blocks. This high utilization level suggests that motorists are circulating around Downtown Newark looking for parking spaces, thus increasing street volumes. Motorists also temporarily double-park or park in restricted zones near corners or loading areas, which contributes to congestion and unsafe conditions. Non-metered blocks (immediately adjacent to metered blocks) were observed to be heavily occupied during the business day and into the evening. Since curbside spaces on these blocks are unregulated it is assumed that the spaces are primarily occupied by vehicles of employees and residents with very little turnover.

OFF-STREET PARKING

Generally, off street parking is considered to be for longer term use than on street parking. A 2007 inventory provided by Newark identified a supply of approximately 19,000 off street spaces in Newark's Downtown area. It is expected that this supply is actually slightly higher today due to the increase in parking surrounding the Prudential Center. The average mid-day occupancy observed in the off-street lots throughout Downtown Newark is somewhere between 80% and 95%.

EVENT PARKING

The event parking throughout Downtown Newark varies based on the venue which is hosting the event, the nature of the event, and the number of event goers. The location of event parking is slightly different for each venue based upon the venue location within the Downtown (e.g. fans going to an event at Bears Stadium typically do not park on the south side of the Prudential Center). Similarly, each event has a different fan base, which has a different parking demand per attendee. Generally, during an event, the parking facilities surrounding the venue reach capacity and the excess demand spills over to outlying parking facilities. The Prudential Center has the greatest area of influence due to the ability to accommodate significantly more attendees than other venues in the area.

Pricing

DAILY PARKING

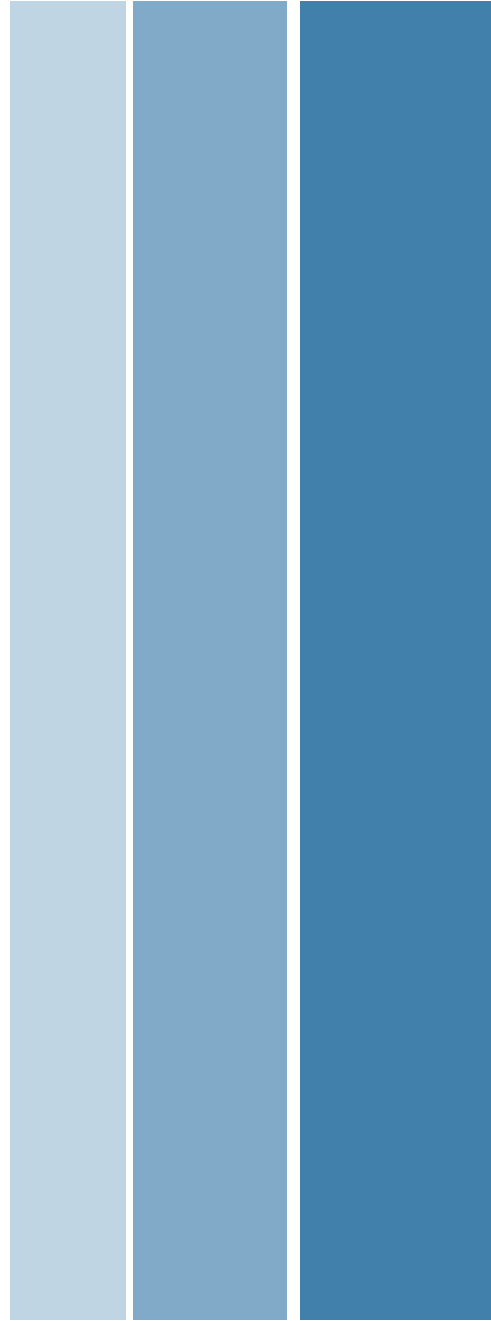
The pricing of the off-street parking facilities varies depending on location, size, and operation of the facility. The majority of the facilities have a fee structure related to length of stay and most have monthly rates. Generally the prices range from \$3 to \$7 for less than 1 hour up to a max daily up to \$21. Monthly rates vary greatly as well from \$50 to \$300. The City of Newark has a 15% daily maximum parking tax on all off-street parking facilities.

EVENT PARKING

Most off-street parking facilities have event parking rates anytime there is an event held at the Prudential Center, New Jersey Performing Arts Center, Bears Stadium, and Symphony Hall. During event times, parking fee is subject to a 7% event surcharge (in addition to the 15% tax). This surcharge is applied to the majority of the parking facilities within the entire Downtown area.

Transportation System Issues

5



Transportation System Issues

This section provides a discussion of key transportation issues that have been identified over the course of preparing the Mobility Element which are critical to Newark's current and future transportation system. Detailed Goals, Objectives, and Actions were developed to address these issues and are presented in another section of this document.

Lack of Centralized Transportation Leadership in City Government

As described in the previous section of this Mobility Element, Newark is an important multi-modal transportation hub serving local, regional, national and international markets. The transportation system is vital to its economy and the welfare of its residents, commuters and visitors. With transportation playing such an important role in Newark's future, the city lacks high level leadership and responsibility for coordinating transportation policy, planning and implementation.

With the momentum efforts afforded by the Master Plan and Mobility Element efforts, the City has the opportunity to appoint a transportation coordinator with jurisdiction over all departments affecting transportation, including Planning and Engineering. This person could set priorities within City government and in external relations with the business community, NJDOT, NJ TRANSIT, Port Authority of NY & NJ, NJTPA and others. One of the principal tasks is to develop proposals for NJTPA-funded transportation planning studies and oversee their implementation.

Underutilization of the Transit System/Over-reliance on Automobile

Despite the fact that transit ridership has increased statewide and throughout the NJ TRANSIT system, transit ridership by those traveling to/from and within the City decreased dramatically over the 30 years between 1970 and 2000. At the same time, the reliance on the automobile for the commuting population and the land use devoted to parking has proportionately increased. This shift to the automobile creates congestion within the city which has a detrimental effect on all aspects of surface transit, pedestrian safety, and ultimately, the economic vitality of the city.

The residents of Newark are generally a transit dependent population as evidenced by the fact that over 39 percent of all households in the City do not own an automobile. Many of these residents find that walking or carpooling is more convenient or cost effective than the current transit system. The passenger rail system, especially the Newark Light Rail system, is a tremendous asset to Newark that is currently underutilized.

Shortcomings of the Transit System

The existing transit service has limitations when it comes to serving the needs of Newark residents who work both within and outside the city. The transit dependent residents of the City are experiencing an accessibility gap between their place of residence and their workplace. Currently, 21 percent of the jobs within the City are located in the port and airport areas where bus service is limited. Additionally, 60 percent of the resident city labor force work outside the city in the less dense suburbs of Newark where bus and rail service is limited. Many of the work trips outside the city of Newark might require several transfers, the service may be limited and walking from the final stop may be hazardous, arduous, or unsafe. Much more needs to be done to document these deficiencies and develop proposals to forge these links. Similarly, Downtown commuters from certain areas outside of the city, in particular the western portions of Essex County, currently have very low transit usage (less than 5%) because they don't have convenient and efficient service to transit serving Downtown.

While some of the Newark Light Rail stations are new and easily accessible, others are aging, in poor condition, and/or in need of rehabilitation. Additionally the schedule and fare associated with the light rail service between Newark Penn Station and Broad Street Station limits ridership.

NJ TRANSIT is addressing some of these issues through the implementation of the recommendations contained within the Greater Newark Bus Study and its capital improvement program of station improvements on the light rail system. A summary of the NJ TRANSIT Greater Newark Bus System Study is contained within Appendix B.

Roadway Congestion

Roadway congestion is directly related to several of the underlying issues currently facing the City's transportation system. The underutilization of the transit system by Newark workers, students and residents equates to more people driving into the City and particularly into the Downtown and University Heights. The Downtown and University Heights currently provide a parking supply which tends to further attract people to using their automobile.

The increased use of the automobile within the City, combined with the physical limitations of the regional roadways and the local city grid system, results in daily congestion at many locations. These locations were identified through traffic modeling utilizing the regional NJRTM-E model that was focused on the City of Newark and confirmed by the experience of the City's traffic engineering professionals. Congestion has been identified along the primary regional roads leading into and out of the City as well as several of the local and County intersections that provide access to the Downtown and University Heights.

Daily congestion throughout the City has a negative effect on many aspects of Newark. The surface transit system is unable to perform at peak efficiency, emergency service responses are hindered, driver frustration leads to more aggressive driving and a decrease in overall safety. In particular, heavy volume (particularly heavy truck volume) and high vehicle speed along Route 21 are perceived as an impediment to nearby development.

While there are engineering and technology advances that could provide some level of improvement to the congestion experienced at certain locations, there needs to be a major shift in the City transportation pattern back to using transit to ensure that the roadway congestion will not hinder the City's future growth.

Underutilization of Land Supported by Transit Facilities

The City of Newark has a concentration of land uses in close proximity to transit facilities such as Newark Penn Station, Broad Street Station, and many light rail stations that are underutilized given their potential to attract future mixed-used, high density development. For example, according to the Business and Industry Element of the Master Plan, there are "more than 20 acres of underutilized land within a half mile walk of Newark Penn Station, which is one of the largest potential assemblages proximate to a Northeast Corridor transit hub".

An additional example of underutilized land proximate to a major transit station is the Newark Liberty International Airport (EWR) Station which is served by both NJ TRANSIT and AMTRAK. Development potential at this station is limited due to the FAA Passenger Facility Charge restriction, which limits the use of the station and the monorail to airport patrons.

The City of Newark is one of nine municipalities within New Jersey that is eligible to participate in the Urban Transit Hub Tax Credit program. This program provides incentive for development within ½ mile of Newark's NJ TRANSIT, PATH, or light rail stations. Based on the program requirements and the extensive number of transit stations, the City of Newark has a large amount of area that is eligible for the program (e.g., land around Broad Street Station and the Orange Street Light Rail Station). As of February 7, 2012, six projects had been approved in Newark, including major office developments, such as Panasonic and Prudential.

In order for the City to meet the aspirations set forth in the Newark Master Plan, more needs to be done to leverage the state incentives and the accessibility afforded by the transit stations. Land use factors such as density, mix of uses, parking, and proximity to transit affect travel demand and behavior. New policies must be enacted by the City that promote sustainable development built around an active street life and nodes of multi-modal transportation, in a manner that is consistent with the Land Use and Business & Industry Elements of the Newark Master Plan.

Local Accessibility

The residents of Newark have a low rate of vehicle ownership, which corresponds to a high percentage of them walking and taking transit to work and other activities. The city has more than 800 bus stops and has 15 light rail stations as well as the major intermodal centers at Newark Penn and Broad Street stations. According to a NJ TRANSIT survey, nearly 50 percent of users of the Newark Light Rail walk to and from the stations. Throughout the public outreach process, many residents expressed the need for improved access to local transit stops and their everyday activities, needs, and opportunities; including work, shopping, recreation, school, medical services, etc. The business community expressed the need for better connections between Downtown and its adjacent neighborhoods, including Ironbound and University Heights. Access to the Passaic River waterfront is currently limited by Route 21 to the north and Raymond Boulevard to the south and east. Local pockets of traffic congestion, cut-through traffic, and truck traffic further hamper local access. Furthermore, the city is lacking in alternative modes of travel such as by bicycle, as the city has very few bike facilities consisting of a couple of short segments of bike lanes. A Bicycle Improvement Plan is contained within Appendix C.

A number of steps have been taken to address these local access issues, including the Newark Downtown District (NDD) Streetscape Improvement Project and the city's commercial streetscapes and pedestrian wayfinding programs to improve the pedestrian environment. The city has recently completed a master plan for public access to and along the Passaic River waterfront. Bike lanes that meet the comfort and safety needs of a range of potential cyclists are being installed on neighborhood streets and in Downtown to improve local mobility, accessibility, and connectivity. The city must do more to reduce local access and mobility constraints of the existing transportation system and address the needs of its residents and visitors. Improving pedestrian and vehicular safety is a key component for better access and connectivity and is listed as a separate issue.

Safety on City Streets

One of the biggest concerns expressed during the public outreach process was the need for the City to improve upon the safety of the streets and roadway network for all users, but especially for pedestrians. In fact, Newark was recently designated a "Pedestrian Focus City" by the Federal Highway Administration given the high number of pedestrian fatalities occurring within the City. Pedestrian and bicycle safety is a key attribute missing today from the fabric of the City's transportation network. The improvement of safety will require a much greater focus and prioritization by the City and its partners; particularly in those geographic areas with the highest accident rates and around crucial community facilities such as: schools, transit stations, and governmental buildings.

Newark has high crash corridors and intersections which require safety enhancements to reduce the number of vehicular, bicycle, and pedestrian crashes. The City must work with its partners to reduce the high number of pedestrian fatalities related to automobile crashes (especially along Broad Street and Route 21), so that the City can be removed from the Federal Highway Administration "Pedestrian Focus City" list and most importantly, future lives can be saved. Other roadways requiring vehicle safety improvements include: Route 1&9, Bergen Street, Bloomfield Avenue, South Orange Avenue, Springfield Avenue, Clinton Avenue, and many other local intersections.

The City has recently created traffic calming and Safe Routes to School programs but lacks a Complete Streets policy, which would strive for streets that serve all users comfortably and safely, whether they are on foot, on a bike, in a car, or on a bus; whether they are able-bodied or have a disability; are young or elderly. A Complete Streets Framework is contained within Appendix D.

Lack of Comprehensive Parking Policy

The City lacks a comprehensive parking policy that satisfies the needs of all users and encourages a greater use of Newark's extensive transit and multi-modal network. This policy would be instrumental in reducing the levels of congestion currently experienced by shifting the focus from the automobile to public transit. This policy would also encourage the development of land uses and appropriate parking for properties well served by multi-modal transportation in a way that promotes the Smart Growth of Newark. These policies are particularly important in the Downtown and University Heights areas.

The parking rate structure throughout the city promotes the use of the automobile as a cost competitive and viable option to taking transit. The use of Newark Penn Station as a park and ride facility by daily commuters is a factor in the congestion of the Downtown. The subsidization of parking for students and faculty of the universities is another factor that leads to congestion throughout the city and parking issues within the outlying residential areas.

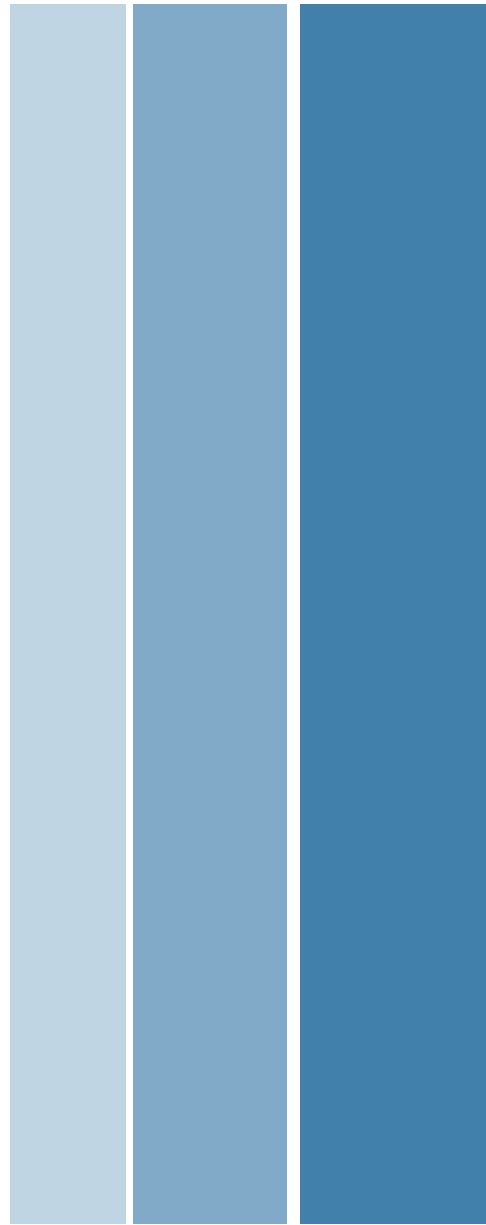
Freight Movement and Air Travel

A large portion of the City's land area encompasses the Port Newark/Elizabeth Marine terminals, Newark Liberty International Airport, and the industrial areas that surround them. These are all important elements in the economy of Newark and the region as a whole. Long-term growth is projected in marine cargo volumes at the port, in air passenger and cargo volumes at the airport, and in industrial activity concentrated in the industrial areas along US-1&9 and the New Jersey Turnpike (I-95) in close proximity to the port and airport. Furthermore, marine transportation infrastructure improvements such as the ongoing harbor dredging efforts and the raising of the Bayonne Bridge to accommodate larger cargo vessels are aimed at helping the region meet this growing demand.

While the City is host to an extensive array of transportation infrastructure to support these activities, these landside transportation elements are under increasing pressure to meet the competing demands of these uses. Regional highways and railroad lines must accommodate the traffic from these major activity centers even as they are burdened with the growing transportation demands of the nation's largest metropolitan area. The age of this infrastructure is also an issue that must be addressed, as much of the City's transportation network was not designed to handle high volumes of vehicular and rail traffic and the large trucks that traverse the nation's highway system today.

Planned & Programmed Transportation Improvements

6



Planned & Programmed Transportation Improvements

This section of the Newark Mobility Element summarizes the latest information gathered on planned and programmed (funded) transportation improvements projects for Newark through various sources. These sources include the North Jersey Transportation Planning Authority (NJTPA) Transportation Improvement Program (TIP) for Fiscal Years 2012 through 2015 and capital plans for NJ TRANSIT, PANYNJ and Amtrak. Many of the projects noted here include the maintenance and minor improvement of infrastructure to existing roadway and transit networks. This is in line with NJDOT's "Fix It First" policy to maintain the existing infrastructure in a state of good repair.

The funding used to implement the TIP projects comes from a variety of sources including: New Jersey Transportation Trust Fund, PANYNJ, and the Federal government. New Jersey's Transportation Trust Fund has been used to fund transportation improvements throughout the state and has limited capacity for roadway and transit system enhancement projects, given the extensive backlog of infrastructure that requires repair and replacement. The current 5 year Transportation Capital Plan is funded by bonding as well as other sources including the Port Authority of NY & NJ and the New Jersey Turnpike Authority.

The PANYNJ generates much of its revenue from the Hudson River bridge and tunnel tolls, aviation and parking fees, bonds, grants, and the Passenger Facility Charge; while Amtrak is funded through a variety of federal and state contributions, as well as ridership fares and rental fees. One of the challenges faced in Newark and throughout New Jersey is to find enough revenue via the Transportation Trust Fund and from contributions made by the Federal government, PANYNJ, and others to support critical transportation enhancements.

With respect to transportation funding, it is important to note the impact the economic effects of the recession has had on the funding of transportation maintenance and enhancements. This recession has been the deepest in our nation's history since the Great Depression. As a result, revenues collected across the board have greatly declined into the coffers of many entities responsible for funding transportation, which, in turn, has led to a reduction in the number of capital projects that have been or will be funded in the near future, as well as transit fare and toll increases to roadways, bridges and tunnels in this region.

Additional federal stimulus was provided to help pump more money into the economy and jump-start projects that were deemed shovel ready through the American Recovery and Reinvestment Act (ARRA) and other programs. This in turn helped provide a short-term boost to the transportation industry, but much more is needed to improve the medium and long-term funding outlook and backlog of repairs and other enhancements. Until our economy more fully recovers from the effects of the recession, and additional local, regional, and national transportation funding solutions are crafted, we are likely to experience a reduction in the number of vital transportation projects that will be carried forward toward implementation.

Roadway Improvements in the TIP

BRIDGE STREET, CLAY STREET, JACKSON STREET BRIDGE CONTROL SYSTEM AND COMMUNICATION REPAIRS

This project will rehabilitate the control system and other communication systems of the Bridge Street, Clay Street, and Jackson Street bridges over the Passaic River connecting Essex and Hudson Counties. Work will include, but not limited to, upgrading of the control system, structural, mechanical and electrical repairs to comply with the recommendations listed on the bi-annual bridge inspection reports.

DELANCY STREET, AVENUE I TO AVENUE P ROADWAY ENHANCEMENT

The Delancy Street corridor is just over one mile and connects freight railroad facilities, intermodal center and trucking and shipping outfits to Rt. 1&9 Portway and the airport/seaport support area. Currently the roadway is operating at an unacceptable Level of Service during peak hours. It frequently floods, interrupting pedestrian and vehicular access to freight and business centers.

MCCLELLAN STREET UNDERPASS

The City of Newark is proposing improvements to the McClellan Street Underpass. Improvement will include improved drainage and horizontal and vertical clearances.

NEWARK ACCESS VARIABLE MESSAGE SIGNAGE SYSTEM

This project consists of design and fabrication of necessary way-finding, variable, and other signs on county roads.

PANYNJ/NJDOT PROJECT PROGRAM

Under this program, the Port Authority will provide funding support for improvements to four NJDOT facilities: Route 7, Hackensack River (Wittpenn) Bridge, Route 139 (Hoboken and Conrail Viaducts), Route 1&9T Extension and Route 1&9 Pulaski Skyway. This program will provide a total of \$1.8 billion from FY 2012 through FY 2016 for these four projects.

The Route 1&9 Pulaski Skyway project will rehabilitate the 3.5 mile-long structure that carries Route 1&9 over the Hackensack and Passaic Rivers, the New Jersey Turnpike, several railroads and industrial facilities. The total project cost is estimated at \$1.2 to \$1.5 billion. The project is located in Jersey City, Kearny and Newark in Hudson and Essex Counties.

ROUTE 1 MP 47.4 - 51.2 AND MP 47.4 - 51.1 RESURFACING

This is a pavement resurfacing project covering Rt. 1 MP 47.4-51.2 and Rt. 1 Local MP 47.4-51.1.

ROUTES 1&9, HAYNES AVENUE OPERATIONAL IMPROVEMENTS

This project proposes a third lane along southbound Route 1&9 local from just south of the existing Haynes Avenue Bridge over Route 1&9 southward to the Anheuser-Busch entrance. This will provide an additional lane for traffic to enter and exit local businesses while still providing two lanes for through traffic. A new outside shoulder is proposed to improve safety between the Route 22 Ramp and Haynes Avenue. To improve traffic operations the project incorporates a roundabout at the intersection of Haynes Avenue, the Route 1&9 Ramps, and Bessemer Street. This will require ramp revisions at Rt. 1&9/Haynes Avenue, and a new access road to Bessemer Street under the Haynes Avenue Bridge.

ROUTE 21 NEWARK WATERFRONT COMMUNITY ACCESS

This project provides funding for pedestrian and open space improvements being built on the north side of Centre Street across Rt. 21 from NJ Performing Arts Center. These improvements will be associated with infrastructure of NJPAC development and build out of a combination boathouse-restaurant on the waterfront side. The project will be bicycle and pedestrian compatible.

ROUTE 21, SOUTHBOUND VIADUCT AND CHESTER AVENUE BRIDGE

This project will include the removal and repair of unsound concrete deck, deck joint replacement, followed by a latex-modified concrete overlay. Miscellaneous superstructure steel repairs will be required on the approach spans. Isolation bearing replacements are necessary to stabilize the viaduct in the event of seismic activity. The new bearings will also be instrumental in providing an increased vertical under-clearance of several inches. Two structures - Route 21 over Chester Avenue immediately north of the viaduct have been added to the project.

ROUTE 78 UNION/ESSEX REHABILITATION, CONTRACT B, MP 53.70 - 58.50

This project will provide highway preventive maintenance, roadway reconstruction, and safety improvements. The structure work includes concrete deck repair and deck joint reconstruction. Also, all bridges will be overlaid with HMA with waterproofing membrane. The drainage system will be upgraded to the current standards. It will include installation of new inlets, pipes, scuppers and down spouts, along the bridge piers. The ITS work includes installation of fiber optic cables to connect ITS facilities.

ROUTE 280 / ROUTE 21 INTERCHANGE IMPROVEMENTS, MP 13.80 - 15.20

West of the Stickel Bridge, the approach interchanges and ramps have four deficient bridges and also operational and safety problems due to lack of speed change lanes, shoulders and many ingress/egress decision points within very short distances. Existing partial interchanges result in missing directional links from the Newark central business district to the I-280 corridor. Preliminary analysis has resulted in concepts that would rehabilitate or replace these bridge and add, relocate or remove ramps and/or add auxiliary lanes and shoulders to I-280.

NJ TRANSIT Improvements in the TIP and Capital Plan

Newark Specific Projects

These projects and improvement programs are specific to the City of Newark.

NEWARK PENN STATION PLAZA WEST (ARRA FUNDED PROJECT)

This project involves exterior pedestrian and traffic circulation improvements on the west side of Newark Penn Station. The scope includes circulation improvements on Raymond Plaza West and the realignment of Alling Street with Raymond Plaza. Roadway improvements include crosswalks, traffic-calming speed tables, in-crosswalk warning lights, and increased drop-off and pick-up spaces with textured pavement. Pedestrian improvements include benches, way-finding signs, tree grates, pedestrian lighting, and related streetscape improvements. The project also involves upgrading traffic signals, roadway lighting, the taxi queuing area, and the intercity bus boarding area²⁵.

NEWARK CITY SUBWAY BLOOMFIELD STATION ADA IMPROVEMENTS

This project includes the installation of two elevators between the platforms and street level; raising platforms to ensure a smooth transition to the light rail vehicles for the mobility impaired; and, installing a public address system with active displays for passenger notification²⁶. The total project cost of the Newark City Subway Bloomfield Station ADA improvements is \$6 million.

DAVENPORT AVENUE ADA ACCESS IMPROVEMENTS

This project involves the demolition of the existing overhead pedestrian walkway and stairs. A ramp with grade crossing and new tactile edging will be installed in place of the walkway. New lighting and shelters will also be installed.

NEWARK PENN STATION

The project includes repair and restoration of passenger boarding platform E, roof drainage systems, canopy roof, duct work, brick and tile walls, windows, doors, passenger waiting areas, signage, lighting, and passenger communications. Also included is the demolition of the abandoned boiler building located at the south end of the station. Platform E serves Track 5 and is primarily used by Raritan Valley Line service for both loading and unloading passengers. It also serves as a connector between the Raymond Boulevard Concourse and the Gateway Center Office and Retail

Complex. The project expected, to be complete by the Summer 2013, will improve the condition, appearance, and functionality of the platforms²⁷.

OTHER RAIL STATION/TERMINAL IMPROVEMENTS

Funding is provided for the design, land acquisition and construction of various stations, parking and related facilities, and upgrades throughout the system, including related track and rail infrastructure work. Also included are station and facility inspection and repair, customer service station bike locker installation - system-wide, and STARS Program. Rail Station/Terminal Improvements are planned for Newark Penn Station and the Elizabeth Rail Station Reconstruction and North Elizabeth Station Repairs.

General Funding Programs

These funding programs are general in nature and are not line item projects with a Newark specific focus.

BRIDGE AND TUNNEL REHABILITATION

This program provides funds for the design, repair, rehabilitation, replacement, painting, inspection of tunnels/bridges, and other work such as movable bridge program, drawbridge power program, and culvert/bridge/tunnel right of way improvements necessary to maintain a state of good repair.

BUS ACQUISITION PROGRAM

This program provides funds for replacement of transit, commuter, and suburban buses for NJ TRANSIT as they reach the end of their useful life, as well as the purchase of additional buses to meet service demands. Federal lease payments are provided for 1,371 Cruiser buses. Pay-as-you-go funding is provided for over 2,300 buses replacements over the next 10-years.

BUS PASSENGER FACILITIES/PARK AND RIDE

This program provides funds for the bus park-and-ride program, improvements to bus passenger facilities and the purchase and installation of bus stop signs and shelters system-wide.

25. NJ TRANSIT Capital Plan weblink: http://www.njtransit.com/tm/tm_servlet.srv?hdnPageAction=CapProjectDetailsTo&CapitalProjectId=55

26. NJ TRANSIT Capital Plan weblink: http://www.njtransit.com/tm/tm_servlet.srv?hdnPageAction=CapProjectDetailsTo&CapitalProjectId=17

27. NJ TRANSIT Capital Plan weblink: http://www.njtransit.com/tm/tm_servlet.srv?hdnPageAction=CapProjectDetailsTo&CapitalProjectId=17

BUS SHELTER INSTALLATION (ARRA FUNDED PROJECT)

This project involves the siting, purchase and installation of approximately 175 bus shelters throughout the state of New Jersey. Shelters are installed statewide at locations requested by the communities or private entities. Also included in this project is improvement to bus signage, passenger information display installation and lighting in bus boarding areas.

BUS SUPPORT FACILITIES AND EQUIPMENT

This program provides funds to maintain NJ TRANSIT's bus fleet including but not limited to bus tires, engines and transmissions, and other parts, support vehicles\equipment (for bus operations), maintenance equipment, and bus mid-life overhaul needs. Also included is midlife rehabilitation of bus facilities, other capital improvements to various support facilities and bus mid-life overhauls. ARRA funding has also been used for this.

CASINO REVENUE FUND

State law provides 8.5% of the Casino Tax Fund to be appropriated for transportation services for senior and disabled persons. This element also supports capital improvements that benefit the senior and disabled populations. The law provides 85% of these funds to be made available to the counties through NJ TRANSIT for capital, operating, and administrative expenses for the provision of locally coordinated paratransit services. The amount each county receives is determined by utilizing an allocation formula based on the number of residents 60 years of age and over as reflected in the most recent U.S. Census Report.

JOB ACCESS AND REVERSE COMMUTE PROGRAM (JARC)

The Job Access and Reverse Commute Program, funded through the Transportation Equity Act for the 21st Century (TEA-21), is intended to support transportation services to connect welfare recipients and other transit dependents to jobs and related employment activities. JARC program funds are matched with Local and/or TANF funds. Specific projects are identified at the MPO level.

LIGHT RAIL INFRASTRUCTURE IMPROVEMENTS

Funding is provided for Light Rail improvements including but not limited to communication systems upgrade, accessibility improvements and other infrastructure rehabilitation improvements. Funding is also provided for Northeast Corridor Infrastructure.

LIGHT RAIL VEHICLE ROLLING STOCK

Funding is provided for annual lease payments for Hudson Bergen Light Rail, Newark City Subway and Newark City Subway Extension vehicles.

LOCOMOTIVE OVERHAUL

Funding is provided for the cyclic overhaul of locomotives based on manufacturer replacement standards to support the equipment through its useful life.

COMMUTER RAIL ROLLING STOCK REHABILITATION (ARRA FUNDED PROJECT)

The Commuter Rail Rolling Stock rehabilitation project involves repairs and replacement of major systems within NJ TRANSIT's passenger car fleet as well as the diesel and electric locomotive fleet. The car system rehabilitation includes electric propulsion, HVAC, cab signal, air brake, wheel axle, truck overhaul, electric door controls, toilets, display units and other electric components. Locomotive systems rehabilitation includes main engines, head and power units, air compressors, generators, alternators, brake assemblies, pantographs, transformers, terminal boards, electric switch gears, cooling fans and unit cylinder power assemblies.

NORTHEAST CORRIDOR IMPROVEMENTS

Funding is provided for improvements to Northeast Corridor (NEC) rail service including both right of way and maintenance of equipment to ensure the NEC is in a state of good repair. Also included are improvements to NEC stations, including Penn Station New York. NJ TRANSIT and AMTRAK enter into a joint benefit agreement to manage how joint benefit funds are spent.

NEW FREEDOM PROGRAM

This program provides funding to encourage services and facilities improvements to address the transportation needs of persons with disabilities that go beyond those required by the American with Disabilities Act. The program provides for associated capital and operating costs to help people with disabilities participate more fully in the workforce and in community life.

PRIVATE CARRIER EQUIPMENT PROGRAM

This program provides State funds for the Private Carrier Capital Improvement Program.

SMALL/SPECIAL SERVICES PROGRAM

Funding is provided for NJ TRANSIT efforts which initiate or promote transit solutions to reduce congestion, manage transportation demand and improve air quality. Included are State funds for the Vanpool Sponsorship Program, Transportation Management Association Program, and Federal funds for East Windsor Community Shuttle operating support. Funding is also provided for capital acquisition/operating expenses for the Community Shuttle Program, Bike/Transit facilitation, and other activities that improve air quality and help reduce congestion.

TECHNOLOGY IMPROVEMENTS

This element funds improvements to passenger communication and fare collection systems and other information technology improvements to meet internal and external customer needs. Funding is included for Public Address Upgrades/Onboard Communication Systems, Bus Radio System Upgrade Program, GIS Systems, TVM Replacement/Expansion, Smart Card Technology, and improvements at stations system-wide, computer systems and services, photocopy lease payments, ADA Access Link computer upgrades and upgrades to increase efficiency and productivity of NJ TRANSIT's technology infrastructure to support services to customers.

RAIL, BUS, AND TRACK MAINTENANCE

Funding is also provided to maintain the fleet of rail cars and buses as well as the track infrastructure in a state of good repair.

NJTPA – Plan 2035: The Regional Transportation Plan for Northern New Jersey

The NJTPA Plan 2035, the region's federally-mandated Long Range Transportation Plan, Appendix D – Transit Investment Analysis, identified several projects that would have a positive impact on transit ridership if implemented in Newark²⁸. Since this plan was adopted in 2009, several projects have been constructed and put into operation, others are in various stages of preliminary planning and design, some are in final design enroute to construction, while others have since been canceled.

Projects that have since been constructed and are operational include: NJ TRANSIT's Newark Light Rail Extension to Broad Street Station, goBus 25, and Liberty Corridor Bus Rapid Transit, as well as the PANYNJ replacement of PATH cars, signals and public address system.

Projects that are under final design and headed towards construction include:

PORTAL BRIDGE CAPACITY ENHANCEMENT FINAL DESIGN (ARRA FUNDED PROJECT)

This project involves the final design of a new two-track, fixed-span bridge across the Hackensack River between Secaucus and Kearny. It is located approximately six miles west of New York City along the Northeast Corridor (NEC) passenger rail line. The scope of this project includes activities for the track structure and track, civil and hydrology work, surveying and geotechnical work, utility engineering, communications and signaling design, electric traction design, and the development of cost estimates for all project components²⁹.

Projects that are no longer under consideration include:

- NJ TRANSIT's Access to the Regions Core (ARC) Tunnel (see Amtrak Gateway Tunnel description below)
- Union County Light Rail - the light rail option has been replaced by a proposed BRT running between Plainfield and Newark Liberty International Airport.

28. NJTPA – Plan 2035: The Regional Transportation Plan for Northern New Jersey, Appendix D – Transit Investment Analysis http://www.njtpa.org/Plan/LRP2035/documents/Appendix_D_Transit.pdf

29. NJ TRANSIT Capital Plan weblink http://www.njtransit.com/tm/tm_servlet.srv?hdmPageAction=CapProjectDetailsTo&CapitalProjectId=40

Several NJ TRANSIT commuter and light rail extension studies would bring additional transit riders to Newark. Many of these commuter rail studies are currently on hold along with the funding necessary to advance them further.

These passenger rail studies are highlighted below:

MONMOUTH-OCEAN-MIDDLESEX RAIL LINE

This DEIS and preliminary engineering is ongoing for the provision of a new commuter rail line to serve Monmouth, Ocean and Middlesex counties and the enhancement of Route 9 bus service. To implement passenger service, the project would rebuild the railroad infrastructure along the existing active and inactive freight lines. The DEIS is examining three alignments: Lakehurst to Monmouth Junction, Lakehurst to Red Bank, and Lakehurst to Matawan. Any of these three rail alternatives would bring additional transit riders to Newark.

WEST TRENTON LINE

A study has commenced to look at restoring commuter rail service for 21 miles on the West Trenton Line between Ewing, in Mercer County, and Bridgewater, in Somerset County, where the line would connect with the existing Raritan Valley Line providing service into Newark.

LACKAWANNA CUTOFF (TO SCRANTON)

The FTA and NJ TRANSIT have finalized a Supplemental Environmental Assessment containing the results of this additional field surveying, consistent with the requirements of Federal regulations. This project would reinstitute passenger rail service on the inactive rail right of way of the Lackawanna Cutoff and over existing freight line in Pennsylvania. The service would extend from Scranton to Hoboken and Midtown Manhattan via transfer to the existing Morris & Essex and Montclair-Boonton trains serving Penn Station, New York and Newark's Broad Street Station. This project includes the restoration of 20 miles of track between Andover and the Delaware River and the complete reconstruction of the line from the Delaware River to Scranton, PA including track and signal improvements to approximately 60 miles of right of way, new stations, parking facilities, a train storage yard and additional rail rolling stock. This initiative will require financial participation by the Commonwealth of Pennsylvania for service in Pennsylvania. The construction of the segment between Andover and Port Morris is currently underway.

EXTENSION OF RARITAN VALLEY LINE OR MORRIS & ESSEX LINE TO PHILLIPSBURG

A study has been completed to investigate alternatives to extending commuter rail service west to Phillipsburg. A preliminary assessment was also completed of bus, shuttle and park-and-ride options. A technical assessment of rail service beyond Phillipsburg into Pennsylvania as a multi-jurisdictional effort with the Lehigh Valley Planning Commission is being advanced. This rail service would either serve Broad Street or Newark Penn Station, depending on which line is extended.

EXTENSION OF HUDSON-BERGEN LIGHT RAIL WEST ACROSS RT. 440 IN JERSEY CITY

An Alternatives Analysis has been completed and a Locally Preferred Alternative (LPA) has been chosen for the extension of the Hudson-Bergen Light Rail (HBLR) system from the current West Side Avenue terminal to redevelopment and existing residential areas along Route 440 in Jersey City. The project has been included in the NJTPA Long Range Plan.

EXTENDING RAIL SERVICE TO FLEMINGTON

A planning study is underway to investigate potential extension of Raritan Valley service to Flemington, utilizing the rights of way of the Norfolk Southern Lehigh Line and the Black River & Western Railroad. This service would connect to the NEC line and terminate at Newark Penn Station.

GREATER NEWARK BUS SYSTEM STUDY

A detailed assessment was completed of NJ TRANSIT and private bus services, routes, facilities and operations in the greater Newark and Elizabeth, Essex and Union county areas to evaluate potential enhancements including modifications to routes, frequencies of service, and development of Bus Rapid Transit (BRT) or express service along heavily-used transit corridors. Some of the recommendations from this study have been implemented while others are moving forward. Many of the bus recommendations contained within the Mobility Element were derived from this study effort.

AMTRAK

The Amtrak study entitled, *A Vision for High-Speed Rail in the Northeast Corridor*, developed the planning framework and made the case for future super high speed rail service operating along the NEC between Boston and Washington D.C., traveling at speeds up to 220 mph. While Newark is not currently planned to be one of the super high speed rail stops for the 220 mph service, it is deemed a “Major City Station” and would see its train speed upgraded to 150 mph on what they call “High-Speed Rail Express” service. There are several key projects in close proximity to Newark that are in the planning, design, and/or construction phase that are needed to make this become a reality. These upgrades are noted below.

NORTHEAST CORRIDOR TRACK AND OVERHEAD WIRE UPGRADE

In the summer of 2011, USDOT announced that Amtrak would receive \$450 million to undertake major upgrades to a 24-mile stretch of track between Trenton and New Brunswick, NJ. This project will replace outdated overhead catenary wires that supply power to the trains, which tend to sag and tighten in variable temperatures and cause significant delays for both NJ TRANSIT and Amtrak passengers. Amtrak is also planning to modernize much of the existing tracks, signals, and power supply along this segment of the NEC. Acela Express trains would then be able to travel at speeds of 160 mph (up from 135 mph today). Once new Amtrak vehicles are obtained passengers will be able to travel at speeds up to 186 mph along this section of track.

GATEWAY TUNNEL

Due to the projected doubling of commuter and regional rail travel along the NEC in the New York and New Jersey area over the next 20 years, Amtrak has taken the lead in proposing the design of two new Hudson River rail tunnels at a cost of \$14.5 billion and timeline of completion for 2025. While the Gateway Tunnel project would not double peak-hour NJ TRANSIT service, as the canceled ARC tunnel would have, it is still one of the highest priority projects for NJ TRANSIT, Amtrak, and the City of Newark. This project would permit NJ TRANSIT to operate approximately 36 trains into New York Penn Station every hour, compared with 20 today, and is vitally important to the economic competitiveness of Newark, the region, and our nation. Newark would benefit from an increase in peak period intercity train service to/from New York Penn Station.

THE NORTHEAST CORRIDOR INFRASTRUCTURE MASTER PLAN

Completed by Amtrak and its consultants in May 2010 notes that in addition to the ARC Tunnel Project, Portal Bridge Replacement Project and upgrades to the NEC track and overhead wires noted above that several other important projects must be addressed within New Jersey. Areas just south of Newark Penn Station have some of the most critical importance for Amtrak within New Jersey, and include the following projects.

NEWARK PENN STATION

Operational improvements to Newark Penn Station are necessary including: track and platform improvements, ADA improvements, and an extension of the platforms.

NEWARK LIBERTY INTERNATIONAL AIRPORT STATION

ADA improvements have been proposed at this station.

HUNTER INTERLOCKING

Within Newark, this project would construct grade separation to move eastbound NJ TRANSIT Raritan Valley trains from the westbound track. This, in turn, would greatly reduce conflicts in this area that result in the slowdown of train speeds.

TRACK, INTERLOCKING AND BRIDGE IMPROVEMENTS

Additional track segments are needed between Secaucus, Newark and Elizabeth in order to increase operating flexibility and mitigate congestion. The Dock Bridge in Newark requires repairs and improvements are needed to several interlockings in the Elizabeth area.

TRENTON TRANSIT CENTER

The Trenton Transit Center, which serves as a terminus for NJ TRANSIT NEC and SEPTA R2 trains has reached its full capacity. This station needs to be reconfigured to add additional train storage capacity, both at this location and other system locations, which will help free up valuable track space currently used by SEPTA trains deadheading to and from Trenton.

Port Authority of New York & New Jersey (PANYNJ)

As part of the PANYNJ's Preliminary 2012 Capital Budget released on December 11, 2011 numerous improvements to Port Authority facilities that affect Newark are identified.

PATH

SAFETY AND SECURITY

Enhance system access control and overall operational safety to protect the PATH infrastructure. This will provide for a safe and effective operation of the entire system.

SIGNAL SYSTEM REPLACEMENT PROGRAM

Replace outdated current signal system with a modern computerized system, which will increase capacity to meet growing ridership demand. The signal system will provide the capability to increase the system capacity by approximately 20% by permitting trains to run safely in close proximity to one another.

STATE OF GOOD REPAIR PROGRAM

Ensure the integrity of the infrastructure by maintaining the functionality of PATH assets. This will help to improve service reliability (e.g., on-time performance). New, upgraded, and well-maintained tracks, communications equipment, and facilities will ensure service reliability and safety. This program will minimize service disruptions by maintaining railcars, substations and various support structures.

SUBSTATION UPGRADES

The PANYNJ will improve reliability and maintain substation equipment by upgrading and replacing certain components of the high-tension feeder sources. Through this effort the PATH system will experience enhanced reliability, maintainability, security and quality of service to their customers.

STATION IMPROVEMENTS

Improvements to stations will enhance safety and quality as well as increase passenger capacity. This will help enhance customer safety and service through increased capacity by extending platforms to allow for 10 car trains (which would increase train capacity by 25%)

Appendix C of the Preliminary 2012 Capital Budget presents a Preliminary Performance Summary matrix which highlights progress made to date on various on-going efforts.

PATH NEW CAR PURCHASE PROGRAM

In 2011, the PANYNJ completed delivery and conditional acceptance of 340 railcars. In 2012, the PANYNJ will receive and put into service 10 new railcars, which will result in improved service reliability and customer service.

PATH SAFETY AND SECURITY PROJECTS

In 2011, the PANYNJ completed the installation of floodgates and interior strengthening in Tunnel F and the complete system installation at the PATH Train Control Center. In 2012, the PANYNJ will advance infrastructure improvements such as the: floodgate installation and mitigation in Tunnel System; advance the design for floodgate and mitigation for Tunnels A & B, and commission the PATH Train Control Center. The completion of these projects will result in enhanced tunnel security and increased operational safety for Newark residents and other commuters commuting from Newark to New York.

The Port Authority Strategic Plan Transportation and Regional Prosperity, released in August 2006, included several local and regional projects of importance to Newark³⁰. The following are just a short list.

PATH TRAIN EXTENSION TO EWR

The plan included \$550 million to plan, design and construct an extension of PATH service to Newark Liberty International Airport between the years 2008 to 2015. This project, which has been on the drawing board for many decades, is a high priority project for the City of Newark.

REGIONAL FARE COLLECTION

This effort would create seamless regional travel and is especially important to the PATH train service in Newark.

30. Port Authority Strategic Plan Transportation and Regional Prosperity weblink: <http://www.panynj.gov/about/pdf/strategic-plan.pdf>

Bridges and Tunnels

BAYONNE BRIDGE MODERNIZATION

This project is critical to the City of Newark. The Bayonne Bridge must be raised to allow for the next generation of large container ships, that will be able to traverse the soon-to-be-enlarged Panama Canal, to pass beneath the bridge and access Port Newark. The project is in the design phase and construction is scheduled to begin in 2013 and be completed by 2016.

Port Commerce

PORT NEWARK

The 2011 capital plan includes investments in a seven point program that will enable Port growth over the next decade. This investment includes an improved transportation infrastructure that will alleviate truck traffic and port congestion and deepen channels and berths, allowing for more cost-efficient and environmentally conscious transportation of cargo.

HARBOR DEEPENING PROGRAM

This will continue the deepening of the harbor's main channels to 50 feet to allow larger vessels to access the Port and make it more competitive from a cost and efficiency basis.

INTERMODAL RAIL PROGRAM

This program continues the construction of a rail system throughout the Port to increase overall capacity and reduce reliance on trucking.

ROADWAY IMPROVEMENT PROGRAM

This program will improve and expand the Port terminal roadway system to increase capacity and reduce delays.

INFRASTRUCTURE PROGRAM

Ensure a state of good repair of the Port assets.

Aviation

The PANYNJ Aviation budget includes a number of key projects for Newark Liberty International Airport (EWR).

MODERNIZATION OF TERMINAL B

Completion of the mid and upper-level expansion to increase terminal capacity to meet expected passenger growth.

AIRTRAIN OVERHAUL

Overhaul of major system components to maintain safe operations and service levels.

TERMINAL A REDEVELOPMENT PLANNING

Planning for the redevelopment of Terminal A to accommodate projected passenger growth

REGIONAL AIRPORT CAPACITY STUDY

The PANYNJ has also recently undertaken a regional airport capacity study that involves a more detailed assessment of airside and landside operations at the agency's three airports, along with passenger and cargo forecasts. A number of alternatives for terminal and runway improvements will be examined for each airport. This study could have enormous implications for transportation and land use in the vicinity of Newark Liberty International Airport, particularly if dramatic changes are proposed for runway configurations, airport terminals and landside road and transit infrastructure.

Other Projects in the Feasibility, Planning or Design Phase

ROUTE 21 MODERNIZATION: EDISON PLACE TO MURRAY STREET

Commonly referred to as the “missing link”, this 1.05 mile segment of roadway was not part of the NJDOT 2.1 mile Route 21 widening program through Downtown Newark from Lafayette Street to Passaic Street, completed in 2006. The segment between Edison Place and Murray Street experiences congestion as traffic bottlenecks from the wider three-lane roadway into the two-lane roadway. On August 3, 2011, the Newark Municipal Council approved a resolution supporting the “Route 21 Newark Needs Analysis Study-4 Lane Alternative” for this segment. This alternative provides for :

- Two lanes in each direction without shoulder
- 12 foot wide sidewalk on the west side and no sidewalk on the east side of the road
- 12 foot wide center median
- Left turn lanes
- Improved traffic operation and safety through new traffic signal system and upgraded pedestrian signals

The project is currently in NJDOT’s Study and Development Program.

COORDINATE/UPGRADE BROAD STREET SIGNALIZATION

The City of Newark is planning the upgrade of traffic signal coordination throughout the City, including along Broad Street. This project will upgrade the traffic signal equipment such that real time adjustments to individual intersections and/or corridors can be made from a central traffic control center.

ROUTE 21 GEOMETRY AND SAFETY IMPROVEMENTS

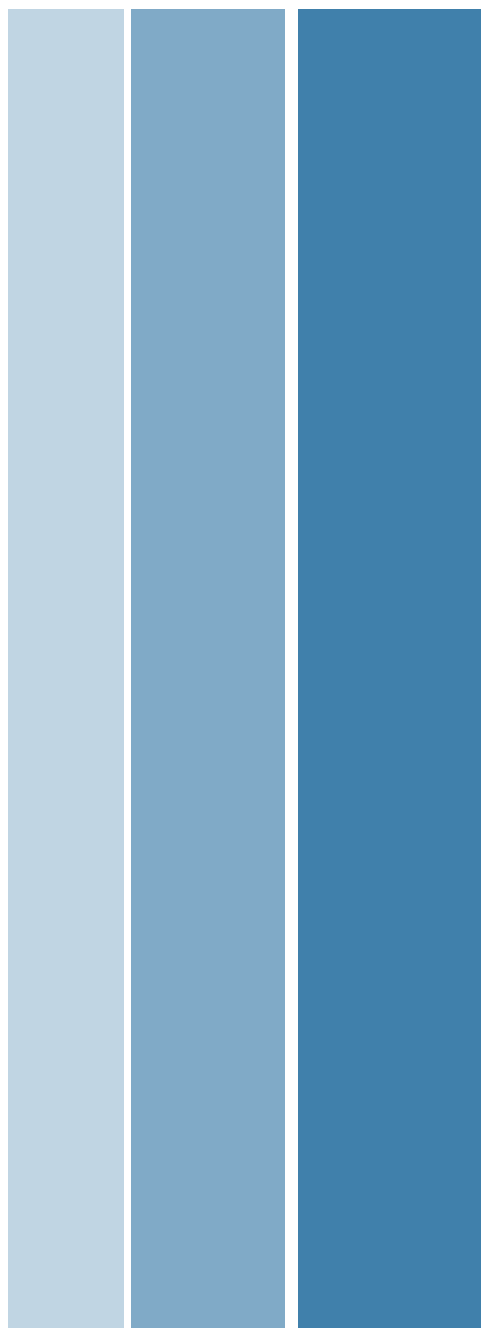
NJDOT has long-term plans to either rehabilitate or replace the elevated section of the Route 21 Freeway just north of Downtown Newark. No cost estimate or construction date has been provided for this project.

ROUTE 21 PEDESTRIAN BRIDGE BETWEEN ARENA DISTRICT, PENN STATION AND IRONBOUND

Edison Properties has proposed creating a pedestrian bridge on a railroad trestle it owns over Route 21 that would make it easier to walk between the Prudential Center/arena zone, the platform levels at Newark Penn Station, and the Ironbound district. This bridge is also included in the Downtown Core Redevelopment Plan as a spur to economic development of the underutilized properties between the Prudential Center and Newark Penn Station. Edison Properties is considering a public private partnership to complete this project.

Projected
Growth

7



Projected Growth

In order to plan a transportation system that meets the needs of all users, it was necessary to gather information on projected land use, employment, and population growth patterns for the City of Newark. This section describes the growth trends developed by the North Jersey Transportation Planning Authority (NJTPA), those who prepared the Newark Master Plan and this Mobility Element, and the professional staff of the City of Newark. Projected growth assumptions were imported into the 2035 future scenario run of the North Jersey Regional Transportation Model Enhanced (NJRTM-E) to analyze the volume and capacity of the future roadway network and identify areas of congestion.

The 2009 Newark Master Plan Re-Examination Report highlights areas within the City where future growth is expected to occur. This growth would be an outcome of several factors, including recommended revisions to land use and zoning within this current Master Plan Study effort. The Master Plan Re-Examination Report will help lay the foundation for future development and redevelopment within the City of Newark.

North Jersey Transportation Planning Authority Projections

NJTPA, with regional partner input, prepares demographic and employment growth projections for the thirteen county region, including Newark. NJTPA completed the latest projections of population, household, and employment growth in 2009 in five-year increments for the years 2010 to 2035. They are shown below in Table 12.

Newark is forecasted to have moderate level of growth over the next 25 years from 2010 to 2035. The population of the City would grow by 14.6%, or nearly 40,946; households would increase by 19.7% or 19,282; and employment by 12.4% or 19,505 jobs. The annualized percentage change in population and employment inherent in forecasts developed by the NJTPA for Newark was consistent with that for Essex County (0.5%); however, the annualized percentage change in households was projected to grow at a greater rate in Newark than in Essex County (0.7% vs. 0.5%).

	2010 (actual)	2015	2020	2030	2035	% Change
Population	277,140	286,850	298,614	315,311	322,191	14.6%
Households	94,542	100,446	105,439	113,288	116,983	19.7%
Employment	148,461	161,884	166,019	173,521	177,393	12.4%

Table 12 - Newark Population, Household, & Employment Forecast
Source: NJTPA, NJTPA Board Adoption 8/24/2009

2009 Master Plan Re-Examination

The 2009 Master Plan Re-Examination Report notes that, after decades of population decline, Newark added approximately 9,000 residents and 7,000 housing units between 2000 and 2007. This population growth spurred the development of a proactive plan to help guide future growth to meet the needs of all residents.

The report called for bold actions to have Newark grow as fast as other cities in northern New Jersey, such as Jersey City, Paterson, Passaic, and Elizabeth. The projected growth rates for these cities in the NJTPA projections were higher than that for the New York metropolitan region as a whole. By 2025, these cities were projected to grow between 17% to 21% (vs. 13% for the region) with the Re-Examination authors envisioning Newark's population increasing by another 50,000 residents over that same time period. This represents an additional increase of 22,000 residents over NJTPA forecasts for Newark.

The Re-Examination report recommended that Newark plan for a variety of different users, such as students, commuters, and those seeking out cultural and entertainment destinations. The student population alone is projected to grow from 47,000 to 60,000 by 2015. Newark's transportation network will have to accommodate the 148,000 workers currently commuting to Newark, the more than 1 million people who attended events at the Prudential Center from 2007 to 2008, and the tens of thousands of additional commuters and students expected in Newark by 2025.

The Re-Examination Report encouraged development around a few key geographic areas of Newark, but also looked at ways to create redevelopment throughout the City. The Air and Seaports and Downtown area were deemed to be key locations for the success of Newark's continued growth. The Port of Newark and Newark Liberty International Airport are the main economic drivers for the City and maximizing their growth was identified as a primary objective. The City has opportunities to develop high job-density uses on over 800 acres in the port area, and should seek to create high value airport related development that generates jobs for Newark residents. Newark's Downtown could be the site of 10,000 new housing units, an expansion of the retail and hospitality businesses, and 5,000 new jobs working in new Class A office developments. Growth projections had Newark creating somewhere between 1.75 and 2.25 million square feet of Class A office space by 2025, with the Downtown poised to accommodate as much as 7 million square feet of new mixed-use development. The Report also envisioned that the active industrial areas north of Interstate 280 could help create new jobs.

The Re-examination Report also focused on the potential of creating 25 acres of new open space in the riverfront area. Currently, public access to the shoreline is limited and in some cases restricted because of land ownership issues as well as limited and unsafe access issues. The Report includes plans to develop the 25 acres of riverfront open space with a vibrant mix of various uses by 2025, which would help attract an estimated 150,000 annual visitors to Newark's riverfront parks and attractions. The Report also envisioned residents throughout the City being able to reach the waterfront safely and without a car.

Master Plan Baseline Projected Growth and Aspirational Goals

The Master Plan team considered two projections for the future growth of Newark’s population and employment by 2025: a baseline founded on forecasts from the NJTPA Plan 2035, and an aspirational projection aligned with the 2009 Master Plan Re-Examination Report. The team considers the City well positioned to capture a far greater share of the region’s growth than what was projected by NJTPA in 2009. It is the perspective of the team that the 2009 NJTPA forecasts may underestimate the population and job growth potential for Newark. Therefore, the Master Plan prepares for an increase of 50,000 residents in year 2025. The Master Plan team also believes that NJTPA’s employment growth forecast is too low, and instead projects an increase of 25,000 jobs by 2025.

The Business & Industry Element of the Master Plan provides development targets similar to those presented in the 2009 Master Plan Re-Examination. The Air and Seaports and Industrial districts, Downtown, and Retail and Hospitality districts were identified as growth areas. An increase in the percentage of port related jobs for Newark residents from 22% to 33% is targeted along with preparing sites for redevelopment with higher concentrations of industrial jobs. The city could likely see the development of 2 million SF of Class A office space in the Downtown, and 1,000 new hotel rooms. In the neighborhood commercial districts and Downtown, the target is to develop 1 million SF of retail space.

Mobility Element Projected Growth for 2035 NJRTM-E

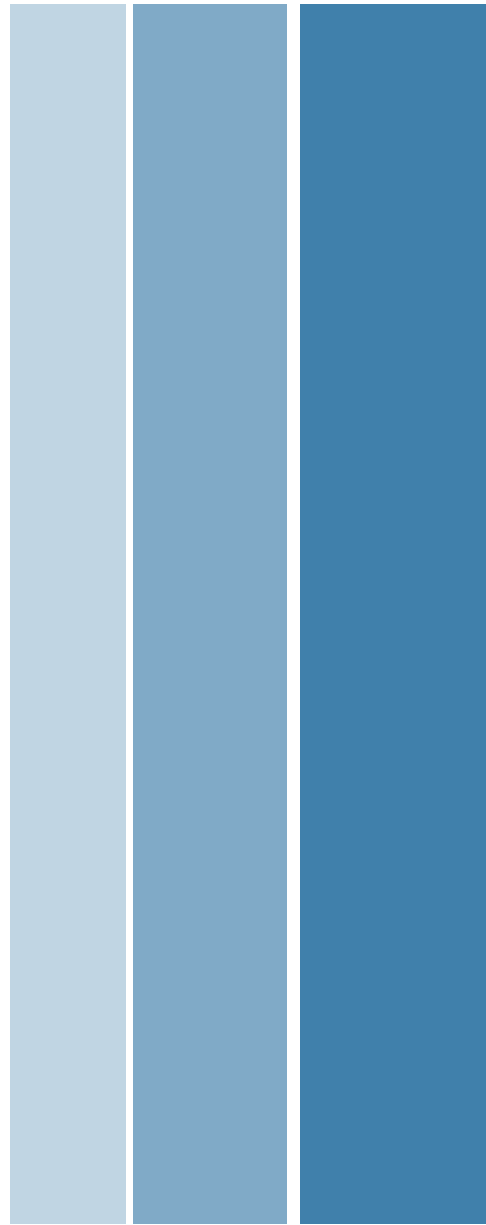
The North Jersey Regional Transportation Model Enhanced (NJRTM-E) was used to identify existing roadway congestion levels and locations of congestion in 2035. Growth assumptions for 2035 are required as input for the future year analysis. The Mobility Element team coordinated with the Land Use, and Business and Industry Elements of the Master Plan, as well as the Newark Department of Economic and Housing Development, to establish population and employment projections that will be used for the 2035 analysis. The City ultimately decided to analyze a more conservative projection than the NJTPA forecasts or Master Plan Re-Examination and Revision projections or aspirational targets. The city acknowledged that while a population increase of 50,000 remains an aspirational goal, a more moderate target population and employment growth should be used for the purposes of assessing future traffic congestion. For the sole purpose of running the transportation model, the city established a 2035 population growth of 35,000 and employment growth of 20,000 jobs (an approximate 12.5% increase for both from 2010).

	2010	2035	Growth	% Change
Population	281,246	316,250	35,004	12.45%
Households	97,701	126,500	28,799	29.48%
Employment	157,888	177,900	20,012	12.67%

Table 13 - Newark Demographic Projections for NJRTM-E 2035 Future Scenario

Adequacy of the Transportation System in 2035

8



Adequacy of the Transportation System in 2035

The City of Newark is endowed with a robust multi-modal transportation system which historically has moved as much or more people and goods than it does today. There has been a modal shift in the way people and goods move throughout the City. Today there is a greater reliance on the automobile than transit for commutation to Downtown and a greater reliance on trucks for movement of goods. Additionally, national and international air passenger travel has increased dramatically. Port activity has increased as well.

This section of the Mobility Element provides an assessment of the ability of the transportation system to accommodate the City’s projected growth in population and employment for 2035, as presented in Section 7 – Projected Growth. The Mobility Element strives to fully utilize the available capacity and growth potential of the system. Assessments were made for all system components from roadway network, to the transit network, to port and airport, to bicyclists and pedestrians.

Roadway Network

The NJRTM-E Regional Model was used as a tool to assess the adequacy of the roadway circulation system and identify future roadway congestion. Projected growth and future transportation network improvements were used as input to the model. As discussed in Section 7 – Projected Growth, the City determined that for the sole purpose of running the transportation model, a population growth of 35,000 and employment growth of 20,000 jobs (an approximate 12.5% increase for both from 2010) would be utilized for travel forecasting in Newark for 2035.

The projects coded in the NJRTM-E are limited to those that increase roadway capacity or throughput, such as lane additions and signal upgrades. Maintenance projects and state of good repair projects are not coded into the model. The two infrastructure improvement projects that were included in the travel demand model analysis include:

- Coordinated signal system along Broad Street
- Coordinated signal system along Route 21 (the entire signalized length through Newark)

After compensating for model validation error and anecdotal evidence, Figure 39 and Figure 40 show areas in Newark where congestion occurs and the severity during the morning and evening weekday peak periods. As was the case for the existing conditions, Newark roadways tend to experience higher levels of congestion during the evening peak period than in the morning peak period. This indicates a longer peak period in the evening as it takes longer for the higher traffic congestion to disperse. It also indicates a more diverse set of trip patterns in the evening. Whereas most morning trips are oriented to or from work, evening peak trips are a mixture of trip purposes including work, shopping, other personal, social, and recreational trips.

It is important to note that the travel demand model does not calculate intersection delays; rather, it calculates delay on the approaches to intersections. The regionally-focused model does not involve operational analyses that take into account intersection geometry, turning lanes, pedestrians, multi-phased signals and the cascading effects of congestion from nearby intersections.

The roadways that will continue to experience severe congestion during the 2035 future scenario weekday morning and evening peak periods include the following: (the letter corresponding to the roadway in Figures 40 & 41 is indicated)

- ☐ I-78 to the NJ Turnpike/I-95
- ☐ Route 280
- ☐ Route 21 in both directions through nearly the entire City of Newark
- ☐ Broad Street
- ☐ Market Street
- ☐ Raymond Boulevard
- ☐ Orange Street
- ☐ Springfield Avenue (select segments)
- ☐ South Orange Avenue
- ☐ Clay Street Bridge
- ☐ Bridge Street Bridge
- ☐ Jackson Street Bridge

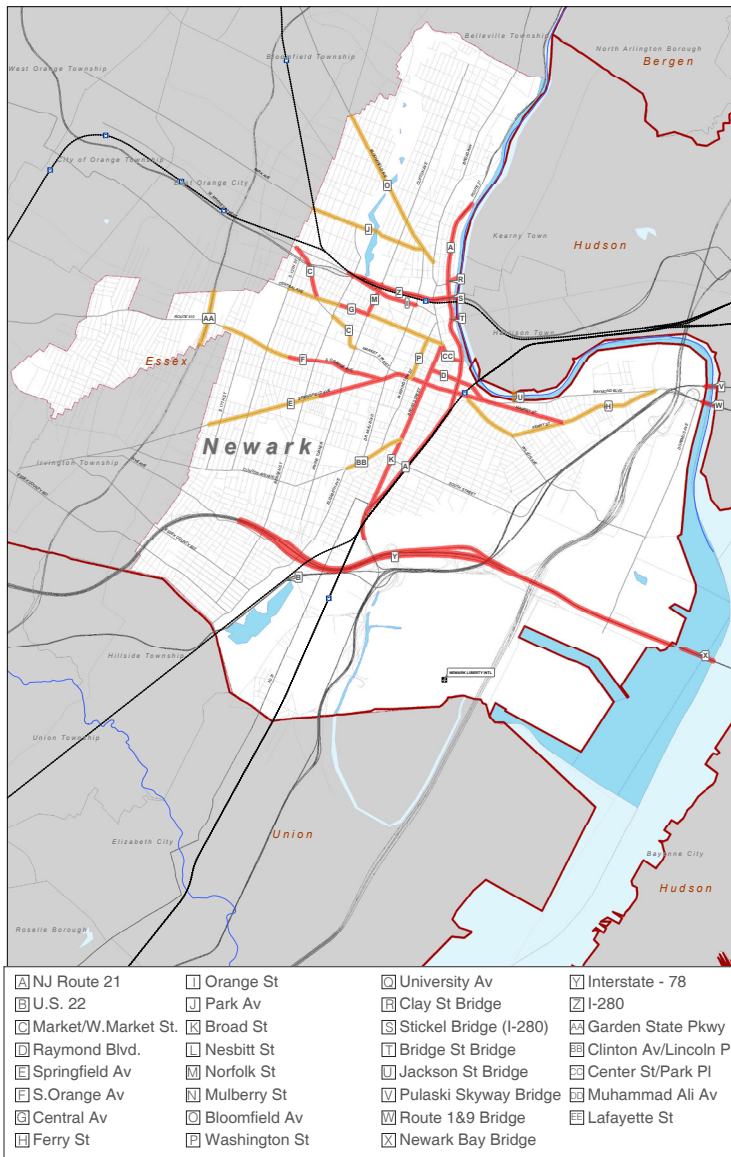


Figure 40- Future Congested Roadways, 2035 (AM Peak Period)

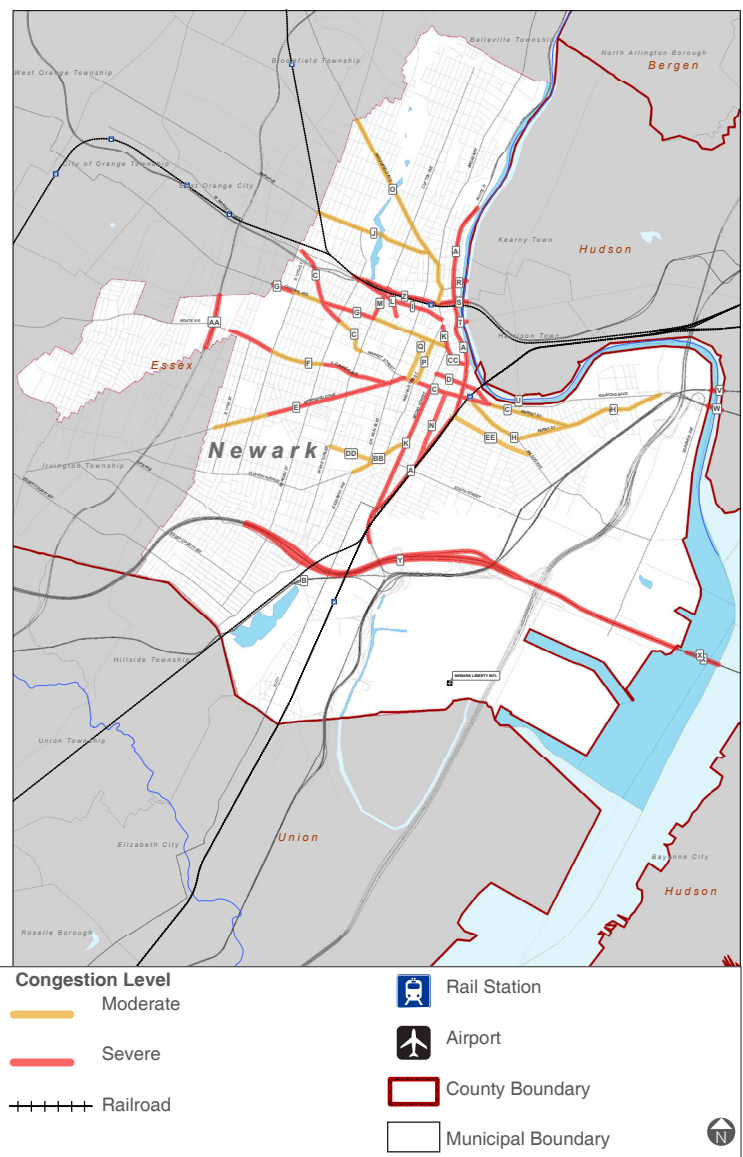


Figure 41 - Future Congested Roadways, 2035 (PM Peak Period)

The following roadways experience a growth in traffic volume significant enough to result in a change to their congestion category (from low to moderate or from moderate to severe). (Important to note is that the model was developed as a regional model so the results, especially on the lower level roadways, are subject to high variance)

- BB Clinton Avenue/Lincoln Park (low to moderate)
- EE Lafayette Street (low to moderate)
- Q University Avenue (low to moderate)
- CC Center Street/Park Place (low to severe)
- DD Muhammad Ali Avenue (low to moderate)
- N Mulberry Street (moderate to severe)
- F South Orange Avenue – just west of Springfield Avenue (moderate to severe)

The results of the modeling analysis indicate that there are numerous roadways where the volumes will exceed the available capacity of the network, resulting in roadway congestion. In order to address the future congestion, the Mobility Element makes recommendations, which increase the use of transit, utilize peripheral park and ride facilities, and minimize congestion through roadway network enhancements. Additionally, detailed area and corridor traffic analyses should be conducted for the congested roadways.

Transit Network

The transit network in Newark is comprised of the commuter rail, the light rail, and the bus systems. The projected ridership discussions are based on the employment projections and the current modal splits as provided in the 2010 census data. Considering the historical ridership of the system serving Newark and the fact that ridership to and from the Newark workplace is currently lower than it has been in the past, it is anticipated that the projected transit ridership increases can be accommodated within the transit system. However, one of the objectives of the mobility element is to increase the transit share throughout the city. Accommodating this increase in transit share will require a focused effort to provide operational upgrades, equipment enhancements, and system restructuring.

Rail Transit

The rail transit system historically (30 to 40 years ago) carried more riders to and from Newark than it does today. NJ TRANSIT has provided data that indicates that in the year 2000 the rail system carried 5,000 fewer Downtown commuters per day than it did in 1970. Overall ridership on the system has increased in recent history, primarily due to the increase in commutation to New York City and Jersey City. NJ TRANSIT describes Newark Penn Station as the maximum load point on the system due to the ability to re-occupy seats vacated by those traveling to Newark or transferring to the PATH by those traveling from or transferring at Newark (primarily to New York City).

By the year 2035 Newark is projected to have an additional 20,000 workers. Table 14 represents a planning level estimate of 2035 ridership based on the current mode split for transit and increases of 5 to 10 percent, as it is anticipated that transit ridership will trend upward in the future. With the current transit mode split, nearly 1,100 additional employees are estimated to utilize commuter rail. The projected transit mode split increases of 5 and 10 percent would result in an estimated 1,800 to 2,100 additional employees using commuter rail, respectively.

NJ TRANSIT has increased capacity with equipment upgrades such as bi-level coaches (which realize a 20% increase in capacity over single level coaches) as well as longer trains. NJ TRANSIT has stated that there is available capacity to further increase the ridership both to and from Newark through additional equipment and service upgrades, but ultimately the capacity of the trains leaving Newark (headed eastbound towards New York City) is limited due to the physical tunnel access into New York.

NJ TRANSIT indicates that additional capacity exists at the Newark Broad Street Station. This station can accommodate growth of ridership to and from Hoboken as well as growth to the rail lines serving the northerly and westerly portions of the state.

		Newark Workers	Newark Workers (5% increase in mode split)	Newark Workers (10% increase in mode split)
A	Worker Growth (projected growth)	20,000	20,000	20,000
B	Transit Users (2010 Census)	20%	25%	30%
C	Estimated 2035 Transit Riders (A*B)	4,000	5,000	6,000
D	Rail Share of Transit Riders (2010 census)	36%	36%	36%
E	Estimated Additional 2035 Rail Riders (C*D)	1,152	1,800	2,160

Table 14 - Estimated 2035 Rail Ridership, Newark Workers

Light Rail

Information obtained from NJ TRANSIT regarding peak period ridership of the light rail system indicates excess capacity currently exists during the peak periods. The weekday morning peak period information (6 to 9 AM) was provided by NJ TRANSIT and indicated a demand of less than 50% of the total car capacity. Of note is that NJ TRANSIT does not have a service policy on the light rail system to provide a seat for every rider, particularly in peak times. However, the light rail system distributes riders who have often transferred from another mode, and NJ TRANSIT has found that customers making shorter distance trips frequently stand near the doors, even when seats are available.

NJ TRANSIT indicates that there is available capacity on Newark Light Rail, during both peak and off peak times, to accommodate new riders who shift to using the service. Table 15 summarizes the light rail car capacity.

	Total Car Capacity (150)	Seated Car Capacity (68)
Car Capacity	6,750	3,060
Demand	2,846	2,846
Seated load Factor	42.2%	93%

Table 15 - Newark Light Rail Car Capacity, weekday 6-9am

Source: NJ TRANSIT January/February 2012 Light Rail Ridership Survey

Bus

The bus transit system had previously accommodated a significant number of additional riders than it does currently. It is acknowledged that the majority of the bus transit riders are residents of Newark or residents of the nearby suburbs traveling to their workplace in Newark.

By the year 2035 Newark is projected to have an additional 20,000 workers. Table 16 represents a planning level estimate of 2035 bus ridership based on the current mode split for transit and increases of 5 to 10 percent, as it is anticipated that transit ridership will trend upward in the future. With the current transit

		Newark Workers	Newark Workers (5% increase in mode split)	Newark Workers (10% increase in mode split)
A	Worker Growth (projected growth)	20,000	20,000	20,000
B	Transit Users (2010 Census)	20%	25%	30%
C	Estimated 2035 Transit Riders (A*B)	4,000	5,000	6,000
D	Bus Share of Transit Riders (2010 census)	64%	64%	64%
E	Estimated Additional 2035 Bus Riders (C*D)	2,560	3,200	3,840

Table 16 - Estimated 2035 Bus Ridership, Newark Workers

mode split, nearly 2,500 additional employees are estimated to utilize bus transit. The projected transit mode split increases of 5 and 10 percent would result in an estimated 3,200 to 3,800 additional employees using bus transit, respectively.

While there are existing bus routes serving Newark which are overcrowded and have frequency and/or running time issues, as indicated in the Greater Newark Bus System Study (GNBSS), it is anticipated that the increase in bus trips could likely be accommodated within the routine service planning and bus operation improvements that could be made by NJ TRANSIT over the next 20 years. The operation improvements should include the continual exploration of expansion of the GoBus system and other priority type treatments as discussed in the Action Plan.

PATH

The PATH system at Newark Penn Station currently operates at or near capacity during the peak periods. The system can accommodate a future increase in ridership through the utilization of operational and service improvements. The Newark Penn Station platform is currently long enough to accommodate utilization of 10 car PATH trains (currently 8 car PATH trains are utilized). The PANYNJ has a station modernization program in their capital plan which would increase the platform length at other stations along the route between Newark and New York in order to accommodate the longer trains, which would increase train capacity by 25%.

Port and Airport

Trucks

The NJTPA has recently completed a 2040 Freight Industry Level Forecasts Study involving industry-based forecasts for freight activity and associated transportation impacts. Truck volumes throughout the region are expected to grow considerably. The heaviest concentration of truck activity is along the NJ Turnpike and Truck Route 1&9 corridor and at the points where these major truck routes intersect, including Interchanges 13A and 14 on the Turnpike. Capacity constraints for trucks in this area are among the key considerations for the NJDOT Portway and Portway Extensions initiatives.

Rail Freight

Rail freight capacity is generally a function of two separate elements of the rail system: mainline capacity and terminal capacity. The North Jersey Transportation Planning Authority (NJTPA) is currently conducting a Rail Freight Capacity and Needs Assessment to Year 2040. The primary focus of this effort is the major freight rail corridors in the North Jersey region. Most of these have segments within the City of Newark or provide access to the port terminal area and surrounding industrial sites. These include: (1) the Conrail and Norfolk Southern sections of the Lehigh Line, the Passaic and Harsimus (P&H) Line, the CSX River Line (accessible to the north via the P&H Line) and the CSX West Trenton Line (accessible to the west via the Conrail Lehigh Line). The NJTPA study will document current conditions and identify infrastructure and operational constraints for the freight rail system under future scenarios, and will identify potential improvements that would be needed for the system to meet anticipated freight and passenger rail needs.

Oak Island and Brills Yard currently have excess capacity, though the aforementioned NJTPA study should be reviewed upon completion to document future activity and demand at these facilities. Parkview Yard, which is located west of Route 1&9 and serves businesses along Frelinghuysen Avenue, is currently active and is primarily used for moving lumber and building materials for these businesses.

Future demand will be strongly tied to industrial land uses in this area of the City. Much of the ongoing growth in cargo volumes at Port Newark-Elizabeth is tied to the various on-dock and near-dock rail facilities; there are, rail capacity issues are strongly linked to port activity in this region. The PANYNJ has committed to a major investment in the construction of a comprehensive rail system throughout the port to facilitate the movement of goods by rail. According the PANYNJ, by 2016 an additional 50% of intermodal rail capacity will be added.

Airport

The Port Authority of New York & New Jersey (PANYNJ) is currently overseeing a major study for airport capacity issues in the entire New York City region. This effort follows up on a broader recent study on the airports in the New York City region conducted by the Regional Plan Association (RPA) in January 2011. The RPA study identified a number of important constraints at Newark Liberty International Airport (EWR).

Key airside capacity constraints include:

- the inability to operate its two north-south runways independently due to their 950-foot separation;
- operational constraints related to the intersection of both north-south runways by the cross-wind runway;
- vertical obstructions at Port Newark-Elizabeth that affect the cross-wind runway operations under some conditions; and
- taxiing movements between the terminals and the easternmost north-south runway that require aircraft to cross the other north-south runway.

Major landside operational constraints at the airport include:

- limited space for cargo facility expansion;
- slow speed and limited capacity for growth of the AirTrain system;
- some highway congestion, which is expected to worsen over time; and
- internal terminal constraints related to passenger screening.

The City should closely follow this study as both the airside and landside constraints would inhibit growth of airport jobs and economic activity.

Seaport

The PANYNJ has undertaken a number of ambitious initiatives to improve capacity for various elements of the transportation system that serves vessels accessing the seaport. These include channels, port terminals, rail facilities, and the port's internal roadway system. The two key initiatives that relate to vessel access, including: (1) the ongoing dredging efforts for the port's channels and berths, and (2) the proposed alterations to the Bayonne Bridge to raise the air draft under the bridge, are expected to accommodate growth in vessel sizes for the foreseeable future. Additional landside improvements, including on-dock and near-dock rail facilities and upgrades in the internal roadway system at Port Newark-Elizabeth, are being performed to expand the port's landside capacity to meet projected future demand. These improvements are typically less costly, implemented more quickly, and are often done to address localized and/or short-term changes in port activity (e.g., changes in vessel schedules from one terminal to another) that may not be reflected in long-term forecasts for the port as a whole.

Bike & Pedestrian

Bike

Currently the bicycle facilities in Newark are inadequate. The existing facilities are limited to a few blocks of Class II facilities (standard on-street bike lanes) and the East Coast Greenway route (signed only). Demographics, such as low car ownership and a high student population, result in a tremendous number of people in Newark who could benefit from the transportation-related benefits (not to mention public health benefits) of properly designed bicycle facilities appealing to a range of potential cyclists.

Newark has significant potential for more bike facilities and, in turn, increased ridership. The city's street grid, prevalence of low-traffic neighborhood streets, and topography are ideal for accommodating a future, well-connected bike facility network. This network will provide connections between the neighborhoods, parks, schools, and Downtown/retail/entertainment opportunities. The future installation of Class II or Class I (on- or off-street protected bikeways) facilities will tend to increase ridership and change the perception of bicycle riding in Newark. More facilities will encourage more people to ride, which will create more awareness of cyclists, leading to improved safety and, in turn, create more demand for more facilities, ultimately resulting in a positive feedback loop and achievement of the key goal of more bicycling and its associated benefits.

Pedestrian

The majority of the streets include sidewalks that were laid out in a pre-1950s grid that allows for connectivity. These sidewalks provide connections to the city's rail and bus service, as well as numerous route choices between land use destinations. Newark's existing pedestrian transportation system plays a crucial role in the mobility of Newark residents, as 8 percent walk to work, 26 percent take public transportation to work, and nearly 40 percent of Newark residents have no access to a vehicle, according to the 2010 Census.

The census data indicates that, until recently, the overall population of the City of Newark has steadily declined as has the daily weekday commuting population in the Downtown. The sidewalk system historically accommodated pedestrian demands that were significantly higher than they are today due to the employment and retail reduction as well as the construction of the Gateway Center pedestrian concourse. This system of sidewalks and pedestrian facilities provides overall capacity to accommodate a significant increase in pedestrian volume.

While the overall pedestrian capacity may be available, since 2005 there have been 2,320 pedestrian crashes reported in Newark, including 41 pedestrian fatalities³¹. Given the high number of pedestrian fatalities occurring in the city, the Federal Highway Administration recently designated Newark a "Pedestrian Safety Focus City"³². The streets with the most fatalities have been Broad Street and Route 21, both with 6 pedestrian deaths since 2005³³. The entertainment venues place additional stress on the pedestrian system due to the concentration of pedestrians (some of whom are unfamiliar with the walking route or simply disregard the pedestrian controls). The entertainment venue events need to be planned for and treated specially.

Considering the number of pedestrian crashes and fatalities, it is evident that there is room for improvement when it comes to pedestrian safety throughout the city. The pedestrian environment needs to be improved, including all aspects of pedestrian safety, such as sidewalks, curb ramps, multi-use paths, crosswalks, pedestrian signals, traffic-calming features, and grade-separated crossings. There are streetscape elements such as landscaping, lighting, and street furniture which should be prioritized in order to improve the pedestrian environment throughout the city.

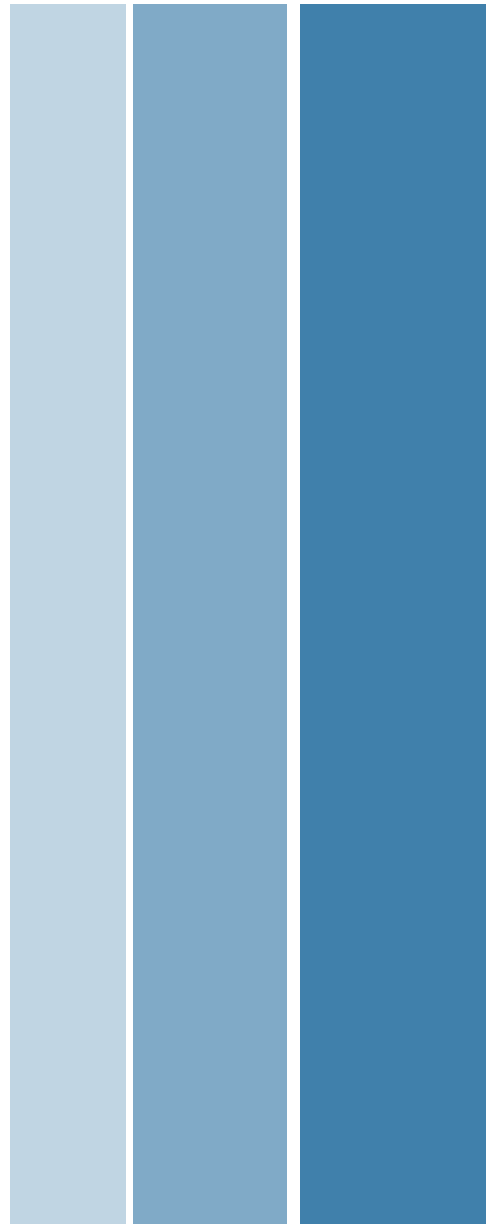
31 North Jersey Transportation Planning Authority analysis of crash data from New Jersey Department of Transportation Plan4Safety and the Rutgers Center for Advanced Infrastructure and Transportation.

32 Federal Highway Administration Safety Program, http://safety.fhwa.dot.gov/ped_bike/ped_focus/

33 North Jersey Transportation Planning Authority analysis of crash data from New Jersey Department of Transportation Plan4Safety and the Rutgers Center for Advanced Infrastructure and Transportation.

Mobility Element Goal, Objectives, Strategies & Actions

9



GOAL

“Ensure that Newark’s transportation system and future improvements meet the needs of its residents, businesses, and visitors; while promoting local, regional, global connectivity, multi-modal travel choices, economic development, and safe and healthy neighborhoods.”

Nine objectives were identified to achieve the Goal of the Mobility Element. These objectives encompass all modes of transportation and support the three Master Plan goals: Economic Development, Healthy and Safe Neighborhoods, City of Choice. The objectives are based on analysis of existing conditions, modeling of future conditions, discussions with City staff and agencies, review of community input, and coordination with the other Master plan Elements’ recommendations. The Objectives are generally listed by transportation topic and not in order of importance. Strategies and Actions were designed to achieve each particular Objective. In some cases, the Strategies are able to support more than one Objective and the Actions describe how each particular Strategy will be implemented.

The written list of Objectives, Strategies, and Actions is numbered to enable the cross referencing of the Strategies and Actions to the various Objectives. The numbering serves as the organization to the Action Plan which is contained in Section 10.

Objectives

1. Public Transit

Increase the use of all forms of public transit by residents, commuters, and visitors to/from and within the City

2. Local Accessibility, Pedestrians, and Bikes

Connect neighborhoods to one another and to the various employment, recreation, entertainment and waterfront destinations within the City

3. Regional Connectivity

Connect the City outward to the local, regional, and global infrastructure and the opportunities they afford

4. Traffic Circulation

Adequately accommodate vehicular traffic and minimize congestion along the City streets and the regional roadway system

5. Safety

Improve the safety of streets and intersections for all users

6. Freight

Facilitate the movement of freight through the Port Newark/Elizabeth and Newark Liberty International Airport areas via enhanced freight access and industrial land use policies which support the continued economic growth of these vital assets

7. Parking

Balance the parking needs and desires of various users (residents, students, workforce, and downtown)

8. Land Use Coordination

Coordinate land use policy and transportation planning

9. Air Travel

Facilitate the movement of passengers through Newark Liberty International Airport via enhanced transit access and improvements in roadway circulation

Objective #1: Public Transit

Increase the use of all forms of public transit by residents, commuters and visitors to/from and within the City.

Despite being well served by a multimodal transit system, and considering that over 39 percent of households in Newark do not own a car, the reliance on transit by Newark's residents, commuters and visitors has shrunk over the past 40 years. In 2000, 26 percent of downtown commuters arrived by transit compared to 50 percent in 1970. The University Heights district, with 45,000-50,000 faculty, staff and students, does not have a large percentage of transit commuters, since parking there is plentiful and inexpensive. In general, the current transit system is underutilized by the City of Newark.

For the city to realize its full development potential, its employees, residents and visitors will increasingly have to rely more on Newark's excellent transit system and less on the automobile. The City will work with its partners (NJ TRANSIT, NJDOT, NJTPA, PANYNJ, etc.) to maintain and enhance local and regional multimodal public and private transit access to Newark in a manner that provides the comfort, convenience, affordability, safety and security required to maintain and attract future transit riders. It is particularly important that the City maintain close liaison with these agencies, so they can understand and act upon the City's transportation goals and the City can keep track of these agencies' initiatives that have a bearing on the well-being of the City. Of special note is the relationship between the City and NJTPA, the metropolitan planning organization (MPO) for northern New Jersey. The Mayor should make a point of attending at least one NJTPA Council meeting yearly, the City should be represented at Council meetings by a Deputy Mayor or an official of equivalent rank, and the City staff should be consulting regularly with NJTPA staff about opportunities for directing study funds available to the MPO to advance Newark's goals.

General

1.1 Strategy: Proactively ensure the maintenance and enhancement of the public transit system serving Newark

- 1.1a Action:** Create a senior level position of transportation / transit coordinator for the City within the Mayor's Office that would be responsible for coordinating transportation functions and prioritizing, lobbying, and monitoring key projects being developed by outside agencies

1.2 Strategy: Encourage Transit Oriented Development (TOD) and use of Urban Transit Hub program at all appropriate station locations, with an emphasis on Newark Penn, Broad Street, Orange Street, and Newark Liberty International Airport stations

- 1.2a Action:** Work with NJ TRANSIT to identify potential TOD opportunities at all existing stations and major bus hubs
- 1.2b Action:** Identify and secure available funding sources and incentives
- 1.2c Action:** Develop a marketing program to encourage Newark TOD opportunities
- 1.2d Action:** Market and assemble properties appropriate for TOD
- 1.2e Action:** Create a clearing house to assist TOD developers

1.3 Strategy: Work with NJ TRANSIT, PANYNJ, and others to advocate for transit cost competitiveness when compared to automobile travel

- 1.3a Action:** Lobby State and federal government to maintain sufficient funding sources to minimize/prevent future transit fare increases
- 1.3b Action:** Lobby State and federal government to increase the pretax transit spending limits
- 1.3c Action:** Advocate for a fair and equitable transit fare policy for Newark residents and workers
- 1.3d Action:** Offer transit promotions and discounts in conjunction with events held at the entertainment destinations within the City

- 1.3e Action:** Work with PANYNJ, NJ TRANSIT, and other public transit operators to create a single universal fare card for all public transit systems, including NJ TRANSIT and PATH

1.4 Strategy: Work with NJ TRANSIT to monitor reliability and adherence to bus, commuter rail, and light rail schedules

- 1.4a Action:** Work with NJ TRANSIT to improve the results of its ridership ScoreCard and identify reasons for customer dissatisfaction
- 1.4b Action:** Develop a working group that includes City Engineering and Planning, Essex County Engineering and Planning, and NJ TRANSIT officials to continue to improve bus travel times through measures, such as transit signal priority, bus stop consolidation, and others to reduce congestion along major bus routes

1.5 Strategy: Provide a responsive network of taxis, car shares, shuttle buses, and other services (such as EZ Ride, which is a publicly funded program to provide complementary public transit service), to fill the gaps that are not addressed by the fixed-route public transit system

- 1.5a Action:** Work with car share providers to expand the current car share availability in the downtown and on the university campuses
- 1.5b Action:** Support the use of JARC and other federal funding sources and collaborate with Essex County in the administration of JARC funds to ensure service for Newark residents who work outside the City

1.6 Strategy: Increase commuter transit ridership into the downtown via (Newark Penn and Broad Street Stations)

- 1.6a Action:** Commission a parking strategy study for the downtown to evaluate the effects of the parking supply and current/past parking policies on transit use
- 1.6b Action:** Reduce the parking requirements for properties located within redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes

- 1.6c Action:** Consider increases in parking taxation for the public parking facilities located within the redevelopment plan areas in the downtown

- 1.6d Action:** Improve the safety and security of the pedestrian corridors/environment to/from and surrounding the stations

1.7 Strategy: Increase transit ridership by the university community

- 1.7a Action:** Encourage increased ridership through the development and expansion of transit discount programs offered by the universities and/or NJ TRANSIT
- 1.7b Action:** Limit the availability and/or subsidization of student and faculty parking
- 1.7c Action:** Improve security on pedestrian routes between universities and transit stations
- 1.7d Action:** Encourage university community use of shuttle bus routes to and from commuter and light rail stations, as well as future remote parking facilities
- 1.7e Action:** Create a student guide to NJ TRANSIT and provide information packets during new/transfer student orientation
- 1.7f Action:** Develop a transit education program to teach students, faculty, administrators how to use transit

Bus Transit

1.8 Strategy: Increase bus transit usage for trips within and outside of the City

- 1.8a Action:** Work with NJ TRANSIT to enhance bus service and seek to advance Bus Rapid Transit (BRT) expansion and bus preferential treatments along existing bus corridors and corridors leading to the port and other employment centers
- 1.8b Action:** Work with NJ TRANSIT to improve bus service (e.g. schedules, routes, and timetables) to existing and proposed large-scale shopping centers, universities and colleges, cultural centers, and new riverfront destinations
- 1.8c Action:** Work with NJ TRANSIT to ensure adequate and safe pick up and drop off areas at each bus stop location

- 1.8d Action:** Work with NJ TRANSIT to enhance weeknight and weekend bus service particularly to the port and airport, University Heights, and other areas where workers and/or students need late-night and/or weekend services
- 1.8e Action:** Encourage the implementation of the Greater Newark Bus study recommendations to expand the Go 28 and create the Go 1 and Go 24 buses
- 1.8f Action:** Work with NJ TRANSIT to encourage the implementation of the Greater Newark Bus study recommendation to restructure Route 40 and create a new Route 18 and Route 33 port shuttle to improve access to the airport
- 1.8g Action:** Work with NJ TRANSIT to encourage the implementation of the Greater Newark Bus study recommendation to expand Route 94 and Route 99 to create intermodal connection opportunities along the routes
- 1.8h Action:** Consider re-activating shuttle services to transport school children to/from after-school activities at Newark's cultural centers
- 1.8i Action:** Work with NJ TRANSIT to ensure there is adequate discussion and input with the municipal government prior to deciding to eliminate any bus routes within Newark

See Appendix B of the Mobility Element for a summary of recommendations contained in NJ TRANSIT's Greater Newark Bus System Study

1.9 Strategy: Improve the marketing of bus service to city workers, residents, and students

- 1.9a Action:** Improve public information, including schedules, routes, wayfinding, and real-time transit information, at bus stops
- 1.9b Action:** Work with the colleges and universities to improve/simplify the buying process and better market transit service to students, including NJ TRANSIT's StudentPass program, as well as faculty and staff

Newark Light Rail

1.10 Strategy: Maintain and improve the existing Newark Light Rail system

- 1.10a Action:** Work with NJ TRANSIT to increase ridership rates on the Broad Street Extension by increasing service levels on the Broad Street Extension to be more consistent with those between Newark Penn Station and Grove Street, Bloomfield.
- 1.10b Action:** Work with NJ TRANSIT to improve stations, station security, and station access at all existing light rail stations.
- 1.10c Action:** Facilitate and support the NJ TRANSIT capital improvement station infrastructure upgrades approved for Bloomfield Avenue Station and support proposed improvements at the Davenport Avenue Station and Norfolk Street Station
- 1.10d Action:** Work with NJ TRANSIT to identify additional station infrastructure improvements
- 1.10e Action:** Work with NJ TRANSIT to develop possible improvements to running time, headway, and schedule for the Broad Street Extension via the development of a demonstration program with shorter headways
- 1.10f Action:** Facilitate and support the provision and/or maintenance of appropriate sidewalks, ADA facilities, crosswalks, and lighting adjacent to the light rail stations
- 1.10g Action:** Facilitate and support the provision of taxi stands at each of the light rail stations
- 1.10h Action:** Work with NJ TRANSIT to establish a rate structure along the Broad Street Extension that is proportional to the rest of the system.
- 1.10i Action:** Work with NJ TRANSIT to evaluate signal timing at all light rail crossings and upgrade signal controllers so that they can effectively accommodate the light rail

1.11 Strategy: Work with NJ TRANSIT to analyze potential extensions of fixed guideway rail systems, such as Newark Light Rail or new streetcar services

- 1.11a Action:** Work with NJ TRANSIT to examine future land use, parking and economic development patterns, plans, and regulatory actions that can complement future potential public transit expansions
- 1.11b Action:** Investigate extensions of light rail service to Lincoln Park, Orange Branch (the abandoned Boonton Line with intercept at Route 21), the North Ward, and the Market Street/Ferry Street corridor through the Ironbound to the port area
- 1.11c Action:** Identify and preserve rights-of-way in Newark for future Light Rail extensions

Commuter Rail

1.12 Strategy: Increase utilization and ridership at the Newark Liberty International Airport (EWR) Station

- 1.12a Action:** Work with NJ TRANSIT, PANYNJ, and the Federal Aviation Administration to explore elimination of the Passenger Facility Charge (PFC) restrictions on use of the station by non-airport patrons
- 1.12b Action:** Identify properties surrounding the Newark Liberty International Airport (EWR) Station for TOD development to support station activities
- 1.12c Action:** Create a park-and-ride facility at Newark Liberty International Airport (EWR) Station for intercept parking and to accommodate the dropping-off and picking-up of passengers
- 1.12d Action:** Investigate the addition of local bus service to the Newark Liberty International Airport (EWR) Station to enhance the station as a multi-modal hub

1.13 Strategy: Improve ridership experience along the existing lines (convenience, comfort, reliability and price)

- 1.13a Action:** Support NJ TRANSIT's program to maintain and upgrade the fleet of railcars including bi-level coaches and dual mode locomotives

1.14 Strategy: Improve the condition of the existing stations.

- 1.14a Action:** Work with NJ TRANSIT to support continual improvements in the dissemination of information to the traveling public
- 1.14b Action:** Work with NJ TRANSIT to support continual improvements and upgrades to the safety and security measures within and surrounding the stations (e.g. lighting, staff presence)

1.15 Strategy: Improve congestion and access issues at and around Newark Penn Station

- 1.15a Action:** Implement Raymond Plaza West improvements
- 1.15b Action:** Work with NJ TRANSIT to develop strategies to mitigate congestion issues around Newark Penn Station

Rail Rapid Transit (PATH)

1.16 Strategy: Improve the passenger experience at Newark Penn Station

- 1.16a Action:** Work with NJ TRANSIT and PANYNJ to improve the accessibility and aesthetic appeal of entrances and platforms
- 1.16b Action:** Increase the number of ticket vending machines (TVM) on the platform and elsewhere in the station
- 1.16c Action:** Improve fare collection by introducing a single universal fare card

1.17 Strategy: Improve PATH schedules during weekend and off-peak (evening) hours

- 1.17a Action:** Work with PANYNJ to reduce off-peak and weekend headways
- 1.17b Action:** Work with PANYNJ to consider eliminating the need to route the Newark to 33rd Street trains through Hoboken during the weekend and off-peak (evening) hours

1.18 Strategy: Extend PATH from Newark Penn Station to Newark Liberty International Airport (EWR) Station, with additional Newark stops considered

- 1.18a Action:** Work with the Newark Regional Business Partnership (NRBP), Regional Plan Association (RPA), PANYNJ, and others to advance evaluations, plans, and financing

1.20 Strategy: Increase service at the Newark Liberty International Airport (EWR) Station

- 1.20a Action:** Work with Amtrak and NJ TRANSIT to provide additional peak hour and off-peak service to the Newark Liberty International Airport (EWR) Station

Amtrak

1.19 Strategy: Facilitate and support the Amtrak Gateway Project, which will provide high-speed regional rail service to Newark Penn Station

- 1.19a Action:** Work with Amtrak, the Federal Railroad Administration (FRA), NJ TRANSIT, NRBP, and others to ensure that the system of regional rail is modernized and upgraded to provide for future enhanced intercity and higher speed rail service and greater train capacity on Northeast Corridor and additional trans-Hudson tunnel access
- 1.19b Action:** Advocate for the implementation of key infrastructure projects that are vital to both Amtrak and NJ TRANSIT, and provided with adequate funding such as: the Portal Bridge Replacement, electrical catenary and substation replacement on the Northeast Corridor, additional Trans-Hudson tunnel access and improved access to/from midtown Manhattan and the New York Penn Station area
- 1.19c Action:** Support replacement of Amtrak rail vehicles with new vehicles that can reach maximum speed permissible by infrastructure upgrades; ensure the most modern standards of comfort and convenience for passengers
- 1.19d Action:** Work with FRA, AMTRAK, NJ TRANSIT, federal and state elected officials and others to provide adequate funding to enable regional rail service to meet the future needs of its ridership.

Objective #2: Local Accessibility, Pedestrians, and Bikes

Connect neighborhoods to one another and to the various employment, recreation, entertainment and waterfront destinations within the City.

Within Newark there is a need to better connect neighborhoods to one another and their local destinations, whether they be for work, shopping, recreation or entertainment. During the public outreach process, many residents expressed the need for easier access to their everyday activities. Although the bus service throughout the City is comprehensive, the routes and transfers can be somewhat indirect and inefficient. Buses as well as autos and trucks traversing neighborhoods sometimes get delayed by traffic congestion due to road conditions, signal problems and lack of enforcement. Another way to connect neighborhoods is the development of a safe, interconnected system of pedestrian and bicycle paths which is critical to a resident population with a low vehicle ownership rate and will also enable people to pursue a healthier lifestyle. Another area of concern expressed at the public outreach meetings was the inability to directly connect residents from their home to their destination.

2.1 Strategy: Improve vehicular circulation and accessibility within the City

- 2.1a Action:** Enforce truck routes to maintain the character of the local streets
- 2.1b Action:** Coordinate traffic signals to optimize timing and create uniform traffic flow conditions and minimize congestion
- 2.1c Action:** Review signal timing on a routine basis to address changing conditions

2.2 Strategy: Develop a context-sensitive “complete streets” policy and program, including design standards, land use plans, and zoning regulations, that provides the highest level of integration between pedestrians, cyclists, and transit riders as appropriate based on surrounding land use and street types

- 2.2a Action:** Develop and adopt a citywide “complete streets” policy for council adoption
- 2.2b Action:** Create “complete streets” guidelines
- 2.2c Action:** Develop a program for the implementation of recommended complete streets investments

See Appendix D of the Mobility Element for more detailed information about developing and implementing a Complete Streets policy and program.

2.3 Strategy: Provide a responsive network of taxis, carshares, jitneys, and other services to fill the gaps that are not addressed by the fixed-route public transit system

- 2.3a Action:** Work with business improvement districts (BIDs) and neighborhood associations to determine the need and feasibility of in-fill transit service
- 2.3b Action:** Locate taxi stands and/or taxi contact information at all transit stations and major activity centers

2.4 Strategy: Continue to enhance the city’s pedestrian network

- 2.4a Action:** Adopt Newark’s River: A Public Access and Redevelopment Plan to develop recommended parallel and perpendicular riverfront access
- 2.4b Action:** Complete the Raymond Boulevard Pedestrian Access Improvement Plan
- 2.4c Action:** Continue streetscape improvements on commercial corridors throughout the city
- 2.4d Action:** Continue the Newark Downtown District (NDD) streetscape program
- 2.4e Action:** Facilitate and support the implementation of the East Coast Greenway plan
- 2.4f Action:** Explore expansion of the Pedestrian Wayfinding Signage Program to other areas of the city
- 2.4g Action:** Implement and expand the Safe Routes to Schools Program
- 2.4h Action:** Devise a Safe Routes to Transit Program
- 2.4i Action:** Strengthen connections and corridors between the downtown and various entertainment, dining, and educational opportunities, as well as residential neighborhoods
- 2.4j Action:** Provide safe pedestrian accommodations across bridge structures that are critical for connectivity to jobs and transit
- 2.4k Action:** Develop citywide ADA transition plan to ensure compliance for all public transit stations, sidewalks, street crossings, and building entrances

2.5 Strategy: Create a city-wide bicycle network that connects neighborhoods, parks, and the waterfront

- 2.5a Action:** Develop a bike facility plan and design guidelines
- 2.5b Action:** Stripe bike lanes when streets are resurfaced and as part of streetscape improvements following the general plan
- 2.5c Action:** Complete the Irvine Turner Boulevard bike lanes
- 2.5d Action:** Construct the Mount Prospect Avenue protected bike lanes
- 2.5e Action:** Implement the East Coast Greenway plan and identify potential additional greenways
- 2.5f Action:** Require new development to provide bicycle amenities on the property and within the buildings
- 2.5g Action:** Expand the current university bikeshare program to include other parking destinations throughout the City

See Appendix C of the Mobility Element for more detailed information on the City's Bicycle Improvement Plan.

2.6 Strategy: Improve roadway connections to the Newark Liberty International Airport (EWR) Station for local traffic

- 2.6a Action:** Improve connectivity and capacity along Haynes Avenue by facilitating and supporting NJDOT's Haynes Avenue project
- 2.6b Action:** Improve connectivity and capacity along McClellan Street by facilitating and supporting the NJDOT McClellan Street project

Objective #3: Regional Connectivity

Connect the City outward to the local, regional, and global infrastructure and the opportunities they afford.

There are a wide range of opportunities and destinations accessible by the City's robust multi-modal transportation infrastructure. The city needs to improve the ability of its residents and workforce to access these opportunities through better connections to the regional roadway and rail network, airport and port.

3.1 Strategy: Improve access to/from employment centers and visitor destinations through better connections from the regional roadway network

- 3.1a Action:** Promote improved utilization of existing vehicular gateways into the Downtown, including:
- Elizabeth/Clinton Avenue to/from I-78
 - Raymond Boulevard to/from the NJ Turnpike and Route 1&9
 - Springfield Avenue, Lyons Avenue, and Central Avenue to/from the Garden State Parkway
- 3.1b Action:** Evaluate proposals for an Orange Street Connector to/from I-280
- 3.1c Action:** Explore the continuation of the widening of Mulberry Street between Green Street and Route 21 for use as an alternative route to Broad Street

3.2 Strategy: Increase the capacity and improve the traffic operating conditions of the regional roadway network serving Newark

- 3.2a Action:** Facilitate and support NJDOT's modernization of Route 21 between Edison Place and Murray Street consistent with the pertinent City Council resolution
- 3.2b Action:** Facilitate and support NJDOT with the programming and completion of the Route 21/I-280 interchange project
- 3.2c Action:** Facilitate and support NJDOT's programming of Route 21 geometric and safety improvements at the north end of the City (e.g. improved alignment and waterfront access)
- 3.2d Action:** Evaluate and consider potential roadway/intersection improvements for high congestion areas (as identified in the regional traffic model)

3.3 Strategy: Improve physical connections between Frelinghuysen Avenue, the airport, and the port area

- 3.3a Action:** Improve connectivity and capacity along Haynes Avenue by facilitating and supporting NJDOT's Haynes Avenue project
- 3.3b Action:** Improve connectivity and capacity along McClellan Street by facilitating and supporting NJDOT's McClellan Street project

3.4 Strategy: Extend PATH from Newark Penn Station to Newark Liberty International Airport (EWR) Station, with additional Newark stops considered.

- 3.4a Action:** Work with the Newark Regional Business Partnership (NRBP), Regional Plan Association (RPA), PANYNJ, and others to advance evaluations, plans, and financing

3.5 Strategy: Improve connections and access from Newark's neighborhoods to the regional transit system through bus and light rail systems

- 3.5a Action:** Investigate the creation of a bus transfer facility at the Newark Liberty International Airport station and review fare structure for employees
- 3.5b Action:** Provide and/or maintain appropriate and safe sidewalks, crosswalks, and bike facilities adjacent to stations/stops

3.6 Strategy: Work with NJ TRANSIT to expand the Go Bus system to provide connections between neighborhoods and job centers

- 3.6a Action:** Expand the Go Bus program by extending the existing Go Bus routes and adding additional routes to serve City neighborhoods and suburban communities for internal and external destinations
- 3.6b Action:** Expand the use of bus priority treatments, including transit signal priority, exclusive bus lanes, and other measures, along new and existing Go Bus corridors
- 3.6c Action:** Work with Essex County to evaluate the ability of JARC-funded services to fill existing gaps in service

Objective #4: Traffic Circulation

Adequately accommodate vehicular traffic and minimize congestion along the City streets and the regional roadway system.

To create additional downtown commercial, residential and retail development and accommodate growth in the port and industrial districts in a way that maximizes its potential, the City will require a proactive intertwined approach of increasing transit use while minimizing roadway congestion. There are various congested local corridor and intersections that require mitigation, capacity improvements and/or improved interchange connections. Many of these locations were identified through the analysis conducted using the North Jersey Regional Transportation Mode-Enhanced (NJRTM-E).

4.1 Strategy: Mitigate existing and future congestion hotspots throughout the city, as identified by the Mobility Element modeling results

- 4.1a Action:** Complete the Broad Street traffic signal optimization program
- 4.1b Action:** Explore the continuation of the widening of Mulberry Street between Green Street and Route 21 for use as an alternative route to Broad Street
- 4.1c Action:** Facilitate and support NJDOT's project to complete the modernization of Route 21 between Edison Place and Murray Street consistent with pertinent City Council resolution
- 4.1d Action:** Facilitate and support NJDOT with the programming and completion of the Route 21/I-280 interchange project
- 4.1e Action:** Facilitate and support NJDOT with the programming of the Route 21 geometric and safety improvements at the north end of the City (improved alignment and waterfront access north of I-280)
- 4.1f Action:** Evaluate proposals for an Orange Street Connector to/from I-280 which may include development of the Orange Street light rail station as a park-n-ride and bus transfer site
- 4.1g Action:** Improve traffic flow on Springfield Avenue, Lyons Avenue, and Central Avenue
- 4.1h Action:** Facilitate and support the completion of roadway and intersection improvements surrounding Penn Station

- 4.1i Action:** Improve the enforcement of peak hour parking restrictions to maintain travel lanes at critical locations throughout the City, including the roadways surrounding schools and Downtown bus lanes

4.2 Strategy: Develop Transportation Demand Management (TDM) strategies for the downtown and university campuses

- 4.2a Action:** Encourage downtown employers to institute TDM, commuter tax benefits and alternative transportation options to the workplace
- 4.2b Action:** Encourage a TDM partnership between NJ TRANSIT and the universities (as described in the 2007 Alan M. Voorhees Transportation Center report prepared for Rutgers University)
- 4.2c Action:** Increase the availability and convenience of carpooling and vanpooling to minimize single-occupancy vehicles
- 4.2d Action:** Encourage the expansion of car sharing locations on public and private property by relaxing the zoning/parking standards that would preclude use
- 4.2e Action:** Allow the reduction of on-site parking requirements through the use of car sharing programs

4.3 Strategy: Through a parking management study, develop a parking management plan that encourages transit and reduces the reliance on automobile use into Downtown and University Heights

- 4.3a Action:** Develop appropriate parking standards for new development to be consistent with the Land Use Element recommendations and the proposed zoning changes
- 4.3b Action:** Encourage the creation of intercept parking facilities outside of the Downtown at the Orange Street Light Rail Station, the Newark Liberty International Airport (EWR) Station, and at Route 21 if Newark Light Rail is extended over the abandoned Boonton Line
- 4.3c Action:** Reduce the parking requirements for the properties located within redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes

- 4.3d Action:** Limit commuter parking in the downtown through zoning and land use regulations

4.4 Strategy: Improve the movement of traffic through the use of adaptive traffic signal systems

- 4.4a Action:** Complete the downtown pilot project for adaptive traffic signal systems
- 4.4b Action:** Obtain funding for the establishment of a Traffic Control Center
- 4.4c Action:** Work with NJDOT to optimize signal timing along the Route 21 corridor
- 4.4d Action:** Work with Essex County to optimize signal timing along County roadways and at the gateways into the City
- 4.4e Action:** Coordinate traffic signals to optimize timing and create uniform traffic flow conditions and minimize congestion
- 4.4f Action:** Review signal timing on a routine basis to address changing conditions
- 4.4g Action:** Utilize Intelligent Transportation Systems (ITS) strategies to operate and monitor intersections within a centralized traffic control center
- 4.4h Action:** Increase the use of Variable Message Signs (VMS) along the critical corridors

4.5 Strategy: Encourage and enforce the use of designated truck routes

- 4.5a Action:** Clearly designate truck routes via upgraded signing throughout the City
- 4.5b Action:** Improve traffic flow along truck routes by providing coordinated traffic signal systems
- 4.5c Action:** Enforce the use of designated truck routes through the city
- 4.6d Action:** Enforce anti-idling laws for trucks throughout the city
- 4.5e Action:** Designate overnight truck parking facilities in or near the Port

4.6 Strategy: Retain the existing street network and the traffic circulation benefits afforded by the city grid

- 4.6a Action:** Encourage provision of secondary access points to minimize reliance on a single driveway
- 4.6b Action:** Develop access management plans for key corridors (encourage shared access and cross access agreements between adjacent property owners to minimize curb cuts)
- 4.6c Action:** Discourage cul-de-sac design for new residential development

Objective #5: Safety

Improve the safety of streets and intersections for all users.

One of the most serious concerns we heard during the public outreach process was for the City to improve the safety of the streets and roadway network for all users. Newark has some of the most dangerous travel corridors which require improved safety enhancements to reduce the number of vehicular, bicycle and pedestrian crashes, particularly along Route 21, Route 1&9, Bergen Street, Bloomfield Avenue, Broad Street, South Orange Avenue, Springfield Avenue, Clinton Avenue and many other local intersections and interstates (i.e. I-95, I-78, I-280). Newark was recently designated a “pedestrian focus city” given the high number of pedestrian fatalities occurring within the City.

5.1 Strategy: Improve vehicular safety throughout the city

- 5.1a Action:** Conduct intersection safety audits at high crash locations
- 5.1b Action:** Advance recommendations from the NJTPA Regional Safety Priority Location Report
- 5.1c Action:** Expand the existing Project Red Light camera enforcement program
- 5.1d Action:** Ensure that traffic signal phasing and timing are in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) guidelines and are appropriate for each intersection
- 5.1e Action:** Ensure compliance with traffic safety laws (e.g., cell phone usage, seatbelts, stop for pedestrians in crosswalks, pedestrian jaywalking)
- 5.1f Action:** Develop a traffic safety education program for all drivers and pedestrians (particularly young and old)
- 5.1g Action:** Ensure that appropriate sight lines are provided at each intersection.
- 5.1h Action:** Explore expansion of the wayfinding signage program to other areas of the city

5.2 Strategy: Improve safety and access to bus stops

- 5.2a Action:** Develop City-wide guidelines and standards for bus shelters, considering ADA compliance, personal safety and security as key criteria
- 5.2b Action:** Based on the City-wide standards, upgrade existing and add new bus shelters at key bus stops

5.3 Strategy: Develop a context-sensitive “complete streets” policy and program, including design standards, land use plans, and zoning regulations, that provides the highest level of integration between pedestrians, cyclists, and transit riders as appropriate based on surrounding land use and street types

- 5.3a Action:** Develop and adopt a citywide “complete streets” policy for Council adoption
- 5.3b Action:** Create “Complete Streets” guidelines
- 5.3c Action:** Develop a program for the implementation of recommended complete streets investments

See Appendix D of the Mobility Element for more detailed information about developing and implementing a Complete Streets policy and program.

5.4 Strategy: Improve bicycle safety throughout the city

- 5.4a Action:** Develop a bike facility plan and design guidelines
- 5.4b Action:** Create a bicycle safety education program within the Newark Public School system

5.5 Strategy: Adopt new pedestrian safety initiatives and expand upon existing pedestrian safety initiatives throughout the city

- 5.5a Action:** Implement and expand the Safe Routes to Schools program
- 5.5b Action:** Devise a Safe Routes to Transit program
- 5.5c Action:** Work with residents and the student population to identify pedestrian safety issues within neighborhoods

5.6 Strategy: Improve sidewalk and crosswalk conditions throughout the city, as prioritized within the Safe Routes to Schools and proposed Safe Routes to Transit programs

- 5.6a Action:** Adopt a capital improvement plan that identifies and addresses necessary sidewalk, curb, handicap accessible ramp, and crosswalk repairs utilizing Newark’s Right-of-Way software program
- 5.6b Action:** Incorporate curb extensions where feasible to shorten crossing distances and make crosswalks more visible

5.6c Action: Ensure that pedestrian crossing times are appropriate and in accordance with the latest requirements at all traffic signals and install additional pedestrian countdown signals

5.6d Action: Create lighting standards (including the use of LED fixtures) that improve safety and visibility; focus on sidewalks, major public gathering spaces, and along major pedestrian corridors throughout the city

5.6e Action: Provide safe pedestrian accommodations across all bridge structures

5.7 Strategy: Ensure vehicle speeds are safe and appropriate throughout the city and especially in residential neighborhoods

5.7a Action: Implement the traffic calming recommendations identified for the Central and West Wards, and expand the program to all wards

5.7b Action: Coordinate traffic signals to optimize timing and create uniform traffic flow conditions and minimize congestion

5.7c Action: Consider the implementation of automated speed limit enforcement

5.7d Action: Expand the installation of flashing speed limit signs adjacent to schools

5.7e Action: Ensure context-sensitive and appropriate design of new streets

5.8 Strategy: Encourage and enforce the use of truck routes

5.8a Action: Clearly designate truck routes via upgraded signing throughout City

5.8b Action: Improve traffic flow along truck routes by providing a coordinated traffic signal system

5.8c Action: Enforce the use of designated truck routes through the City

5.8d Action: Enforce anti-idling laws for trucks, particularly in areas that are in close proximity to residential neighborhoods

5.9 Strategy: Maximize access and mobility for seniors and the mobility-impaired.

5.9a Action: Design street signage and street crossings to accommodate the needs of the elderly and mobility-impaired populations

5.9b Action: Develop citywide ADA transition plan to ensure compliance for all public transit stations, sidewalks, street crossings, and building entrances

5.9c Action: Working with NJ TRANSIT, ensure adequate para-transit services for seniors and the mobility impaired

Objective #6: Freight

Facilitate the movement of freight through the Port Newark/Elizabeth and Newark Liberty International Airport areas via enhanced freight access and industrial land use policies which support the continued economic growth of these vital assets.

The Port Newark/Elizabeth Marine Terminal complex and Newark Liberty International Airport are key regional assets for freight movement and provide major economic benefits to the City of Newark as well as the region as a whole. These facilities have substantial long-term growth prospects, and the City should take advantage of these assets by encouraging sound industrial development policies in the vicinity of the port and airport. In addition, key roadway improvements along roadways that provide access to and through key industrial sites should be done in places where infrastructure deficiencies constrain access or result in inefficient truck movements. The City of Newark should also assume a prominent stakeholder role for projects that are outside its jurisdiction and implemented by other agencies but have considerable impacts on freight movement and industrial development in the City.

6.1 Strategy: Improve the physical constraints on local roadways that hinder the growth of the port, airport, and other industrial areas of the City

- 6.1a Action:** Incorporate sufficient geometric considerations for truck access in any future roadway improvements on designated truck routes; to the extent possible, ensure that minimum design standards for vertical clearance and heavy load roadways based on access needs for modern trucks (53 feet long, 102 inches wide) are met when improvements are made on these roadways
- 6.1b Action:** Eliminate height restriction on Avenue P under the former CNJ Newark and New York Railroad alignment
- 6.1c Action:** Enhance connectivity between Route 1&9 and the industrial area bordered by Amtrak's Northeast Corridor and Frelinghuysen Avenue by widening the Northeast Corridor overpass at McClellan Street and raising the vertical clearance

6.1d Action: Improve geometric conditions and make operational improvements to enhance access to industrial sites along east-west roadways north of the seaport, including Foundry Street, Wilson Avenue, and Delancey Street; these could include drainage improvements, roadway realignment, access control improvements, and potential new intersection controls at industrial driveways

6.1e Action: In coordination with local stakeholders, develop a maintenance program for roads and bridge freight routes to ensure they can accommodate current and future freight activities related to economic trends and major projects of regional significance (e.g., Panama Canal expansion, raising of Bayonne Bridge air draft, and capacity improvements at Newark Liberty International (EWR) Airport)

6.2 Strategy: Engage implementing agencies by getting involved in a stakeholder role on major transportation projects that have potential local benefits and/or adverse impacts

- 6.2a Action:** Support the long-term initiative to improve the NJ Turnpike interchange 15E, Route 1&9, and the Pulaski Skyway (as part of the Pulaski Skyway rehabilitation project), and identify local access needs for nearby industrial sites
- 6.2b Action:** Support and promote two key projects in the NJDOT Portway initiative, including the Doremus Avenue interchange with Route 1&9 and the new Passaic River Bridge crossing to the South Kearny peninsula
- 6.2c Action:** Support and promote key projects in the NJDOT Portway Extensions initiative, including improvements at NJ Turnpike interchange 14 and the interim Newark Bay Bridge improvement
- 6.2d Action:** Support and promote the ongoing effort by the Port Authority of NY&NJ (PANYNJ) to raise the Bayonne Bridge to increase navigational clearance restrictions
- 6.2e Action:** Actively engage the Port Authority of NY&NJ (PANYNJ) on an ongoing basis to identify changes in cargo activity at the seaport complex related to the raising of the Bayonne Bridge and other major projects and economic trends

6.2f Action: Actively engage the Port Authority of NY&NJ (PANYNJ) to assess local benefits and impacts of any proposed upgrades and enhancements to increase capacity at Newark Liberty International Airport

6.2g Action: Play an active role in organizations where Newark has a strong presence and a vested interest in ongoing efforts, such as the North Jersey Transportation Planning Authority (as a Subregion, Newark is represented on the NJTPA's Board of Trustees and committees), the Newark Regional Business Partnership (NRBP) and the Newark Alliance. The City should explore the potential for future appointments to the Board of Commissioners for the Port Authority of NY&NJ, the New Jersey Turnpike Authority, and other state agencies, such as the New Jersey Economic Development Authority and the New Jersey Redevelopment Agency

6.3 Strategy: Identify industrial development opportunities in the port area that can capitalize on freight railroad alignments

6.3a Action: Promote the development of industrial parcels in the Newark Industrial District at rail-accessible sites

6.3b Action: Engage railroad industry representatives at Conrail, CSX, Norfolk Southern, and Canadian Pacific Railways to explore potential rail-oriented industrial development in the vicinity of Oak Island Yard

6.3c Action: Identify off-airport air cargo facility needs that may result from the displacement of existing on-airport facilities under proposed runway or terminal expansion initiatives at Newark Liberty International Airport

Objective #7: Parking

Balance the parking needs and desires of various users (residents, students, workforce, and downtown).

During the public and stakeholder outreach process, numerous concerns were voiced about the need for the City to develop a citywide parking policy (car and bicycle) for residents, students, commuters, and events that considers zone designations, metering, permits, loading zones, and enforcement. Concern was expressed that appropriate parking standards be developed to encourage and increase the use of transit by commuters (downtown and students). This in turn will ensure the neighborhood commercial areas and residential areas have sufficient parking to accommodate their needs while not being negatively impacted by the daily influx of university and downtown employee populations.

7.1 Strategy: Develop a parking management plan for the Downtown that encourages transit and reduces reliance on the automobile

- 7.1a Action:** Reduce the parking requirements for the properties located within the redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes
- 7.1b Action:** Develop appropriate parking standards for new development to be consistent with the Land Use Element recommendations and the proposed zoning changes
- 7.1c Action:** Limit commuter parking in the downtown through zoning and land use regulations
- 7.1d Action:** Consider increases in parking taxation for the public parking facilities located within the redevelopment plan areas in the downtown
- 7.1e Action:** Encourage the creation of intercept parking facilities outside of the Downtown at the Orange Street Light Rail Station, the Newark Liberty International Airport (EWR) Station, and at Route 21 if Newark Light Rail is extended over the abandoned Boonton Line
- 7.1f Action:** Encourage employers to utilize Transportation Demand Management (TDM) strategies, including shared parking, transit benefits, employee parking cash outs, and ride share programs

7.1g Action: Encourage the development of structured parking that can be used by both downtown office and residential / visitor populations (i.e., shared parking)

7.1h Action: Encourage joint parking facilities and mixed-use parking structures with streetscape-appropriate uses (e.g., retail, residential) fronting streets and pedestrian areas

7.1i Action: Allow surface parking as a conditional/interim use as properties are assembled for higher use development

7.2 Strategy: Use zoning and land use regulations to identify and regulate the appropriate amount of parking

- 7.2a Action:** Allow and encourage increased densities and reduced parking requirements at and near transit facilities
- 7.2b Action:** Require new development to provide bicycle amenities on the property and within the buildings
- 7.2c Action:** Encourage the expansion of car sharing locations on public and private property by relaxing the zoning/parking standards that would preclude the use

7.3 Strategy: Provide a sufficient parking supply to adequately and appropriately support neighborhood commercial areas

- 7.3a Action:** Create on-street parking regulations for commercial corridors with appropriate time restrictions and fare rates that encourage parking turn-over
- 7.3b Action:** Develop a Smart Card parking system that allows residents and frequent shoppers to conveniently pay for metered parking
- 7.3c Action:** Evaluate metered parking time restrictions to encourage commercial activity during off-peak hours
- 7.3d Action:** Create appropriate on-site parking standards for large-scale commercial land uses

7.4 Strategy: Maintain parking availability for residents

- 7.4a Action:** Work with neighborhood residents and stakeholders to evaluate and improve the existing residential parking policy which provides permits and zones
- 7.4b Action:** Enforce parking regulations within neighborhood zones to eliminate student and employee utilization of spaces needed for residential use

7.5 Strategy: Provide appropriate parking for the university community that also encourages transit use

- 7.5a Action:** Encourage TDM partnership between NJ TRANSIT and the universities (as described in the 2007 Alan M. Voorhees Transportation Center report prepared for Rutgers University)
- 7.5b Action:** Create a permit parking system for the universities that reduces the availability of parking at or near the campus
- 7.5c Action:** Seek opportunities to create shared parking and car sharing options

7.6 Strategy: Provide curbside parking policy and regulations that are enforceable and functional

- 7.6a Action:** Develop a policy for the use and location of loading zones that is uniform and can be enforced throughout commercial areas
- 7.6b Action:** Develop a policy for the enforcement of “no standing”, “no parking”, and double parking regulations

Objective #8: Land Use Coordination

Coordinate land use policy and transportation planning.

In order for the City to meet the aspirations set forth in the Newark Master Plan there will need to be a different direction taken with regard to how land use and transportation is planned for in the future. Land use factors such as density, mix of uses, parking, and proximity to transit affect travel demand and behavior. New policies must be enacted that promote sustainable development built around an active street life and nodes of multi-modal transportation and that are consistent with the Land Use Element of the Master Plan.

8.1 Strategy: Use zoning and land use regulations to reduce vehicle demand in the downtown and concentrate development around transit stations

- 8.1a Action:** Allow and encourage increased densities and reduced parking requirements at and near transit facilities
- 8.1b Action:** Reduce the parking requirements for the properties located within the redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes
- 8.1c Action:** Encourage the creation of intercept parking facilities outside of the Downtown at the Orange Street Light Rail Station, the Newark Liberty International Airport (EWR) Station, and at Route 21 if Newark Light Rail is extended over the abandoned Boonton Line
- 8.1d Action:** Require new development to provide bicycle amenities on the property and within the buildings
- 8.1e Action:** Encourage the expansion of car sharing locations on public and private property by relaxing the zoning/parking standards that would preclude the use

8.2 Strategy: Encourage transit-oriented development (TOD) and use of Urban Transit Hub program at all appropriate station locations, with an emphasis on Newark Penn, Broad Street, Orange Street and Newark Liberty International Airport stations

- 8.2a Action:** Work with NJ TRANSIT to identify potential TOD opportunities at all existing stations and major bus hubs
- 8.2b Action:** Identify and secure available funding sources and incentives, including re-use of the abandoned CNJ Broad Street rail bridge for a traffic free pedestrian crossing
- 8.2c Action:** Develop a marketing program to encourage Newark TOD opportunities
- 8.2d Action:** Market and assemble properties appropriate for TOD
- 8.2e Action:** Create a clearing house to assist TOD developers

Objective #9: Air Travel

Facilitate the movement of passengers through Newark Liberty International Airport via enhanced transit access and improvements in roadway circulation.

Newark Liberty International Airport (EWR) is one of the City's major transportation assets and generators of economic activity. According to figures published by the Port Authority of New York & New Jersey, there are about 24,000 people directly employed at the airport and a total of 141,000 jobs in the region related to airport activity. The airport contributes approximately \$19 billion in economic activity to the New York City and northern New Jersey metropolitan region. Nearly 34 million passengers traveled through Newark Airport in 2011, and long-term growth prospects for air travel in the region are strong. Airport users have unique transportation needs that must be accommodated in a region with aging, heavily-used transportation infrastructure. Nearly 80 percent of passengers at Newark Airport use automobiles to get to/from the airport, and the local roadway system will come under increasing strain to accommodate this mode share as passenger volumes grow.

9.1 Strategy: Actively engage key stakeholders to identify future airport activities, including airport improvements and expansions that have major implications for Newark

- 9.1a Action:** Participate in stakeholder meetings and other activities associated with the Port Authority of NY&NJ's (PANYNJ) ongoing regional airport capacity study
- 9.1b Action:** Identify opportunities for intercity rail service improvements that could alleviate airport congestion by reducing short-distance air travel to/from Newark Liberty International Airport (EWR)

9.2 Strategy: Promote non-auto access to Newark Liberty International Airport (EWR) through the development of transit alternatives

- 9.2a Action:** Work with NJ TRANSIT and the Port Authority of NY&NJ to identify potential enhancements to bus and rail transit service and appropriate fares
- 9.2b Action:** Work with the Newark Regional Business Partnership (NRBP), Regional Plan Association (RPA), PANYNJ, and others to advance evaluations, plans, and financing
- 9.2c Action:** Identify off-airport transit improvements at existing or new transit facilities, such as the accommodation of air travelers at outlying rail parking lots that could enhance transit access to/from Newark Liberty International Airport
- 9.2d Action:** Work with existing airport-related businesses at off-airport locations to develop and enhance transit access for airport passengers (e.g., location of employee hotels in the City or near outlying NEC stations, shuttle buses)

9.3 Strategy: Identify airport-related redevelopment opportunities in the vicinity of Newark Airport

- 9.3a Action:** Work with NJ TRANSIT, Port Authority of NY&NJ, and the Federal Aviation Administration to identify potential legal constraints to expanded usage of Newark Liberty International Airport rail station from outside airport and rail system
- 9.3b Action:** Identify high-profile airport-oriented development opportunities (e.g., hotels, conference facilities, convention center adjacent to EWR station) that provide economic benefits to Newark and can integrate transit accessibility to/from the airport

Action
Plan

10

Action Plan

The Action Plan is developed from the written list of Objectives, Strategies, and Actions. This Action Plan organizes the recommendations into a chart format which provides the following additional detailed information for each Action:

- range of time for implementation
- range of cost for implementation
- recommendations regarding the city department lead
- recommendations regarding the agencies (outside of Newark) that are required for implementation.

The range of time for implementation is divided into 4 categories. These ranges are project durations from concept to construction of a project that is continually moving forward.

- less than 5 years
- 5 to 10 years
- greater than 10 years
- on-going

The range of cost for implementation is divided into 4 categories. These cost estimate ranges include design, permitting and construction related costs (operating and maintenance costs are not included).

- less than \$250k
- \$250k - \$5 mil
- \$5 mil - \$50 mil
- \$50 mil - \$500 mil
- Greater than \$500 mil

The City department lead represents the department within the City of Newark that would most likely take the lead on implementing a particular Action. At times there are several departments which could or should take the lead in order for an Action to move forward.

An outside implementing agency (or agencies) is identified when a particular Action requires the approval of a jurisdictional agency outside the City of Newark. The relationship between the City of Newark and the numerous agencies is critical due to the fact that these agencies have jurisdiction over several of the major components of the City's transportation system.

Objective #1: Public Transit

INCREASE THE USE OF ALL FORMS OF PUBLIC TRANSIT BY RESIDENTS, COMMUTERS, AND VISITORS TO/FROM AND WITHIN THE CITY

Objective														

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INCREASE THE USE OF ALL FORMS OF PUBLIC TRANSIT BY RESIDENTS, COMMUTERS, AND VISITORS TO/FROM AND WITHIN THE CITY

Action		Timeframe	Cost	City Department Lead	Outside Agency	Objective								
						1	2	3	4	5	6	7	8	9
1.4	Work with NJ TRANSIT to monitor reliability and adherence to bus, commuter rail and light rail schedules													
1.4a	Work with NJ TRANSIT to improve the results of its ridership ScoreCard and identify reasons for customer dissatisfaction	On-Going	<\$250k	Mayor's Office	NJ TRANSIT	*								
1.4b	Develop a working group that includes City Engineering and Planning, Essex County Engineering and Planning, and NJ TRANSIT officials to continue to improve bus travel times through measures, such as transit signal priority, bus stop consolidation, and others to reduce congestion along major bus routes	<5 years	<\$250k	Mayor's Office, City Planning	Essex County Engineering, Essex County Planning, NJ TRANSIT	*								
1.5	Provide a responsive network of taxis, car shares, shuttle buses, and other services (such as EZ Ride, which is a publicly funded program to provide complementary public transit service), to fill the gaps that are not addressed by the fixed-route public transit system													
1.5a	Work with car share providers to expand the current car share availability in the downtown and on the university campuses.	<5 years	<\$250k	Mayor's Office, City Planning	Car Share Providers University Community	*								
1.5b	Support the use of JARC and other federal funding sources and collaborate with Essex County in the administration of JARC funds to ensure service for Newark residents who work outside the City	On-Going	<\$250k	Mayor's Office, City Planning	Essex County NJ TRANSIT	*								
1.6	Increase commuter transit ridership into the downtown via (Newark Penn and Broad Street Stations)													
1.6a	Commission a parking strategy study for the downtown to evaluate the effects of the parking supply and current past parking policies on transit use	<5 years	<\$250k	City Planning		*								
1.6b	Reduce the parking requirements for properties located within redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes	<5 years	<\$250k	City Planning, Mayor's Office		*			4.3c			7.1a	8.1b	
1.6c	Consider increases in parking taxation for the public parking facilities located within the redevelopment plan areas in the downtown	5 - 10 years	<\$250k	City Planning, Mayor's Office		*						7.1i		
1.6d	Improve the safety and security of the pedestrian corridors/environment to/from and surrounding the stations	On-Going	\$250k to \$5M	Newark PD, City Engineering, City Planning	Essex County	*								
1.7	Increase transit ridership by the university community													
1.7a	Encourage increased ridership through the development and expansion of the transit discount programs offered by the universities and/or NJ TRANSIT.	<5 years	<\$250k	Mayor's Office	University Community, NJ TRANSIT	*								
1.7b	Limit the availability and/or subsidization of student and faculty parking.	5 - 10 years	<\$250k	Mayor's Office, City Planning	University Community	*								
1.7c	Improve security on pedestrian routes between universities and transit stations	On-Going	<\$250k	Newark PD	University Community	*								
1.7d	Encourage university community use of shuttle bus routes to and from commuter and light rail stations, as well as future remote parking facilities	<5 years	<\$250k	Mayor's Office, City Planning	University Community	*								
1.7e	Create a student guide to NJ TRANSIT and provide information packets during new/transfer student orientation	<5 years	<\$250k	Mayor's Office	University Community	*								
1.7f	Develop a transit education program to teach students, faculty, administrators how to use transit	<5 years	<\$250k	Mayor's Office	University Community	*								

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										Objective								
Action			Timeframe	Cost	City Department Lead	Outside Agency	1	2	3	4	5	6	7	8	9			
Bus Transit																		
Increase bus transit usage for trips within and outside of the City																		
1.8a	Work with NJ TRANSIT to enhance bus service and seek to advance Bus Rapid Transit (BRT) expansion and bus preferential treatments along existing bus corridors and corridors leading to the port and other employment centers			5 - 10 years	\$5M - \$50M	Mayor's Office, City Engineering	NJ TRANSIT, Coach USA	*										
1.8b	Work with NJ TRANSIT to improve bus service (e.g. schedules, routes, and timetables) to existing and proposed large-scale shopping centers, universities and colleges, cultural centers, and new riverfront destinations			On-Going	\$250k - \$5M	Mayor's Office	NJ TRANSIT, University Community	*										
1.8c	Work with NJ TRANSIT to ensure adequate and safe pick up and drop off areas at each bus stop location.			On-Going	\$250k - \$5M	City Engineering	NJ TRANSIT	*										
1.8d	Work with NJ TRANSIT to enhance weekend and weekend bus service particularly to the port and airport, University Heights, and other areas where workers and/or students need late-night and/or weekend services			<5 years	\$250k - \$5M	Mayor's Office	NJ TRANSIT, PANYNJ	*										
1.8e	Encourage the implementation of the Greater Newark Bus study recommendations to expand the Go 28 and create the Go 1 and Go 24 buses			5 - 10 years	\$5M - \$50M	Mayor's Office	NJ TRANSIT, PANYNJ	*										
1.8f	Work with NJ TRANSIT to encourage the implementation of the Greater Newark Bus study recommendation to restructure Route 40 and create a new Route 18 and Route 33 port shuttle to improve access to the airport			5 - 10 years	\$5M - \$50M	Mayor's Office	NJ TRANSIT, PANYNJ	*										
1.8g	Work with NJ TRANSIT to encourage the implementation of the Greater Newark Bus study recommendation to expand Route 94 and Route 99 to create intermodal connection opportunities along the routes			5 - 10 years	\$5M - \$50M	Mayor's Office	NJ TRANSIT	*										
1.8h	Consider re-activating shuttle services to transport school children to/from afterschool activities at Newark's cultural centers.			<5 years	\$250k to \$5M	Mayor's Office	Board of Education, activity & cultural centers (NJPAC, Newark Museum, etc.)	*										
1.8i	Work with NJ TRANSIT to ensure there is adequate discussion and input with the municipal government prior to deciding to eliminate any bus routes within Newark			On-Going	<\$250k	Mayor's Office	NJ TRANSIT	*										
Improve the marketing of bus service to city workers, residents, and students																		
1.9a	Improve public information including schedules, routes, wayfinding and real-time transit information, at bus stops			<5 years	\$250k to \$5M	Mayor's Office, City Engineering	NJ TRANSIT	*										
1.9b	Work with the colleges and universities to improve/simplify the buying process and better market transit service to students, including NJ TRANSIT's StudentPass program, as well as faculty and staff			<5 years	<\$250k	Mayor's office	NJ TRANSIT, University Community	*										

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										Objective										
										1	2	3	4	5	6	7	8	9		
Newark Light Rail																				
Action										Cost	City Department Lead			Outside Agency						
Timeframe																				
Newark Light Rail																				
Maintain and improve the existing Newark Light Rail system																				
1.10																				
Work with NJ TRANSIT to increase ridership rates on the Broad Street Extension by increasing service levels on the Broad Street Extension to be more consistent with those between Newark Penn Station and Grove Street, Bloomfield.										On-Going	<\$250k	City Planning			NJ TRANSIT	*				
1.10a																				
Work with NJ TRANSIT to improve stations, station security, and station access at all existing light rail stations.										<5 years	<\$250k	City Planning, City Engineering			NJ TRANSIT	*				
1.10b																				
Facilitate and support the NJ TRANSIT capital improvement station infrastructure upgrades approved for Bloomfield Avenue Station and support proposed improvements at the Davenport Avenue Station and Norfolk Street Station										5 - 10 years	\$5M - \$50M	City Planning, City Engineering			NJ TRANSIT	*				
1.10c																				
Work with NJ TRANSIT on identify additional station infrastructure improvements.										<5 years	TBD	City Planning, City Engineering			NJ TRANSIT	*				
1.10d																				
Work with NJ TRANSIT to develop possible improvements to running time, headway and schedule for the Broad Street Extension via the development of a demonstration program with shorter headways.										<5 years	<\$250k	Mayor's Office, City Planning, City Engineering			NJ TRANSIT	*				
1.10e																				
Facilitate and support the provision and/or maintenance of appropriate sidewalks, ADA facilities, crosswalks, and lighting adjacent to the light rail stations										On-Going	<\$250k	City Engineering, Essex County			Essex County	*				
1.10f																				
Facilitate and support the provision of taxi stands at each of the light rail stations.										<5 years	<\$250k	Mayor's Office, City Planning, Taxi Commission			NJ TRANSIT	*				
1.10g																				
Work with NJ TRANSIT to establish a rate structure along the Broad Street Extension that is proportional to the rest of the system.										<5 years	TBD	Mayor's Office			NJ TRANSIT	*				
1.10h																				
Work with NJ TRANSIT to evaluate signal timing at all light rail crossings and upgrade signal controllers so that they can effectively accommodate the light rail.										<5 years	<\$250k	City Engineering			NJ TRANSIT	*				
1.10i																				
Work with NJ TRANSIT to analyze potential extensions of fixed guideway rail systems, such as Newark Light Rail or new streetcar services																				
1.11																				
Work with NJ TRANSIT to examine future land use, parking and economic development patterns, plans, and regulatory actions that can complement future potential public transit expansions										<5 years	<\$250k	City Planning			NJ TRANSIT	*				
1.11a																				
Investigate extensions of light rail service to Lincoln Park, Orange Branch (the abandoned Boonton Line with intercept at Route 21), the North Ward, and the Market Street/Ferry Street corridor through the Ironbound to the port area										On-Going	\$5M - \$50M	City Planning, City Engineering			NJ TRANSIT, Essex County	*				
1.11b																				
Identify and preserve rights-of-way in Newark for future Light Rail extensions.										5 - 10 years	\$5M - \$50M	City Planning, City Engineering			Essex County, Bergen County	*				
1.11c																				

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Objective															
Action			Timeframe	Cost	City Department Lead	Outside Agency	1	2	3	4	5	6	7	8	9
Commuter Rail															
1.12 Increase utilization and ridership at the Newark Liberty International Airport (EWR) Station															
1.12a	Work with NJ TRANSIT, PANYNJ, and the Federal Aviation Administration to explore elimination of the Passenger Facility Charge (PFC) restrictions on use of the station by non-airport patrons			On-Going	\$250k - \$5M	Mayor's Office	NJ TRANSIT, PANYNJ, FAA	*							
1.12b	Identify properties surrounding the Newark Liberty International Airport (EWR) Station for TOD development to support station activities			5 - 10 years	<\$250k	City Planning, Brick City Development Corp		*							
1.12c	Create a park-and-ride facility at Newark Liberty International Airport (EWR) Station for intercept parking and to accommodate the dropping-off and picking-up of passengers			5 - 10 years	\$250k - \$5M	City Planning, City Engineering	NJ TRANSIT, PANYNJ	*							
1.12d	Investigate the addition of local bus service to the Newark Liberty International Airport (EWR) Station to enhance the station as a multi-modal hub			5 - 10 years	<\$250k	City Planning	NJ TRANSIT, PANYNJ	*	3.5a						
1.13 Improve ridership experience along the existing lines (convenience, comfort, reliability and price)															
1.13a	Support NJ TRANSIT's program to maintain and upgrade the fleet of railcars including bi-level coaches and dual mode locomotives			<5 years	<\$250k	Mayor's Office	NJ TRANSIT	*							
1.14 Improve the condition of the existing stations															
1.14a	Work with NJ TRANSIT to support continual improvements in the dissemination of information to the travelling public.			On-Going	<\$250k	Mayor's Office	NJ TRANSIT	*							
1.14b	Work with NJ TRANSIT to support continual improvements and upgrades to the safety and security measures within and surrounding the stations (e.g. lighting, staff presence)			On-Going	\$250k to \$5M	Mayor's Office, City Engineering, Newark PD	NJ TRANSIT, Amtrak PD	*							
1.15 Improve congestion and access issues at and around Newark Penn Station															
1.15a	Implement Raymond Plaza West improvements.			<5 years	\$5M - \$50M	Mayor's Office, City Engineering	NJ TRANSIT	*							
1.15b	Work with NJ TRANSIT to develop strategies to mitigate congestion issues around Newark Penn Station			On-Going	\$250k to \$5M	Mayor's Office, City Engineering	NJ TRANSIT	*							

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										Objective								
Action					Timeframe	Cost	City Department Lead	Outside Agency	1	2	3	4	5	6	7	8	9	
Rail Rapid Transit (PATH)																		
1.16 Improve the passenger experience at Newark Penn Station																		
1.16a	Work with NJ TRANSIT and PANYNJ to improve the accessibility and aesthetic appeal of the entrances and platforms.				5 - 10 years	\$250k to \$5M	Mayor's Office	NJ TRANSIT, PANYNJ	*									
1.16b	Increase the number of ticket vending machines (TVM) on the platform and elsewhere in the station.				<5 years	<\$250k	Mayor's Office	NJ TRANSIT, PANYNJ	*									
1.16c	Improve fare collection by introducing a single universal fare card.				<5 years	\$250k to \$5M	Mayor's Office	NJ TRANSIT, PANYNJ	*									
1.17 Improve PATH schedules during weekend and off-peak (evening) hours																		
1.17a	Work with PANYNJ to reduce off-peak and weekend headways.				<5 years	<\$250k	Mayor's Office	PANYNJ	*									
1.17b	Work with PANYNJ to consider eliminating the need to route the Newark to 33rd Street trains through Hoboken during the weekend and off-peak (evening) hours.				<5 years	<\$250k	Mayor's Office	PANYNJ	*									
1.18 Extend PATH from Newark Penn Station to Newark Liberty International Airport (EWR) Station, with additional Newark stops considered																		
1.18a	Work with the Newark Regional Business Partnership (NRBP), Regional Plan Association (RPA), PANYNJ, and others to advance evaluations, plans, and financing				> 10 years	>\$500M	Mayor's Office, City Planning, City Engineering	RPA, PANYNJ, NJ TRANSIT, NRBP	*		3.4a						9.2b	

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Objective														
Action		Timeframe	Cost	City Department Lead	Outside Agency	1	2	3	4	5	6	7	8	9
Amtrak														
Facilitate and support the Amtrak Gateway Project, which will provide high-speed regional rail service to Newark Penn Station														
1.19a	Work with Amtrak, the Federal Railroad Administration (FRA), NJ TRANSIT, NRB, and others to ensure that the system of regional rail is modernized and upgraded to provide for future enhanced intercity and higher speed rail service and greater train capacity on Northeast Corridor and additional Trans-Hudson tunnel access	On-Going	>\$500M	Mayor's Office	Amtrak, FRA, NJ TRANSIT, NRB	*								
1.19b	Advocate for the implementation of key infrastructure projects that are vital to both Amtrak and NJ TRANSIT, and provided with adequate funding such as: the Portal Bridge Replacement, electrical catenary and substation replacement on the Northeast Corridor, additional Trans-Hudson tunnel access and improved access to/from midtown Manhattan and the New York Penn Station area	On-Going	>\$500M	Mayor's Office	Amtrak, FRA, NJ TRANSIT, NRB	*								
1.19c	Support the replacement of Amtrak rail vehicles with new vehicles that can reach maximum speed permissible by infrastructure upgrades; ensure the most modern standards of comfort and convenience for passengers.	On-Going	>\$500M	Mayor's Office	Amtrak	*								
Increase service at the Newark Liberty International Airport (EWR) Station														
1.20a	Work with Amtrak and NJ TRANSIT to provide additional peak hour and off-peak service to the Newark Liberty International Airport (EWR) Station.	<5 years	<\$250k	Mayor's Office	Amtrak, NJ TRANSIT, PANYNJ	*								

Objective #2: Local Accessibility, Pedestrians, and Bikes

CONNECT NEIGHBORHOODS TO ONE ANOTHER AND TO THE VARIOUS EMPLOYMENT, RECREATION, ENTERTAINMENT AND WATERFRONT DESTINATIONS WITHIN THE CITY

						Objective								
Action		Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	9
2.1 Improve vehicular circulation and accessibility within the City														
2.1a	Enforce truck routes to maintain the character of the local streets	On-Going	<\$250k	City Police Department			*		4.5c	5.8c				
2.1b	Coordinate traffic signals to optimize timing and create uniform traffic flow conditions and minimize congestion	On-Going	<\$250k	City Engineering	NJDOT, Essex County		*		4.4c,d,e	5.7b				
2.1c	Review signal timing on a routine basis to address changing conditions	On-Going	<\$250k	City Engineering	NJDOT		*		4.4f					
2.2 Develop a context-sensitive “complete streets” policy and program, including design standards, land use plans, and zoning regulations, that provides the highest level of integration between pedestrians, cyclists, and transit riders as appropriate based on surrounding land use and street types														
2.2a	Develop and adopt a citywide “complete streets” policy for council adoption	<5 years	<\$250k	Mayor’s Office, City Engineering, City Planning, City Council	NJDOT		*			5.3a				
2.2b	Create “complete streets” guidelines	<5 years	<\$250k	City Engineering, City Planning,			*			5.3b				
2.2c	Develop a program for the implementation of recommended complete streets investments	<5 years	<\$250k	City Engineering, City Planning			*			5.3c				
2.3 Provide a responsive network of taxis, carshares, jitneys, and other services to fill the gaps that are not addressed by the fixed-route public transit system														
2.3a	Work with business improvement districts (BIDs) and neighborhood associations to determine the need and feasibility of in-fill transit service.	<5 years	<\$250k	Mayor’s Office	NJ TRANSIT, Meadowlink		*							
2.3b	Locate taxi stands and/or taxi contact information at all transit stations and major activity centers.	On-Going	\$250k - \$5M	City Planning, City Engineering, Taxi Commission	NJ TRANSIT		*							

Objective #2: Local Accessibility, Pedestrians, and Bikes

CONNECT NEIGHBORHOODS TO ONE ANOTHER AND TO THE VARIOUS EMPLOYMENT, RECREATION, ENTERTAINMENT AND WATERFRONT DESTINATIONS WITHIN THE CITY

										Objective								
Action				Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	9		
Continue to enhance the city's pedestrian network																		
2.4	Adopt Newark's River: A Public Access and Redevelopment Plan to develop recommended parallel and perpendicular riverfront access						< 5 years	<\$250k	City Planning, City Engineering, City Elected Officials		*							
2.4b	Complete the Raymond Boulevard Pedestrian Access Improvement Plan						<5 years	\$250k - \$5M	City Engineering	NJDOT	*							
2.4c	Continue streetscape improvements on commercial corridors throughout the city						On-Going	\$5M - \$50M	Housing & Economic Development (HED), Urban Enterprise Zone (UEZ), City Engineering	NJDOT	*							
2.4d	Continue the Newark Downtown District (NDD) streetscape program						On-Going	\$5M - \$50M	NDD, City Engineering, City Planning	NJDOT	*							
2.4e	Facilitate and support the implementation of the East Coast Greenway plan						On-Going	\$250k - \$5M	City Planning, City Engineering		*							
2.4f	Explore expansion of the Pedestrian Wayfinding Signage Program to other areas of the city						5 - 10 years	<\$250k	City Engineering		*							
2.4g	Implement and expand of the Safe Routes to Schools Program						<5 years	\$250k - \$5M	City Engineering, City Planning	NJDOT	*			5.5a				
2.4h	Devise a Safe Routes to Transit Program						< 5 years	\$250k - \$5M	City Engineering, City Planning	NJ TRANSIT, NJDOT	*			5.5b				
2.4i	Strengthen connections and corridors between the downtown and various entertainment, dining, and educational opportunities, as well as residential neighborhoods						On-Going	TBD	City Planning	NJDOT, NJ TRANSIT	*							
2.4j	Provide safe pedestrian accommodations across bridge structures that are critical for connectivity to jobs and transit						On-Going	TBD	City Engineering	NJDOT, NJ TRANSIT, PANYNJ	*			5.6e				
2.4k	Develop citywide ADA transition plan to ensure compliance for all public transit stations, sidewalks, street crossings, and building entrances						< 5 years	TBD	City Engineering	NJDOT, NJ TRANSIT, AMTRAK, PANYNJ	*			5.9b				
Create a city-wide bicycle network that connects neighborhoods, parks, and the waterfront																		
2.5a	Develop a bike facility plan and design guidelines						< 5 years	<\$250k	Mayor's Office, City Engineering		*			5.4a				
2.5b	Stripe bike lanes when streets are resurfaced and as part of streetscape improvements following the general plan						On-Going	\$250k - \$5M	City Engineering		*							
2.5c	Complete the Irvine Turner Boulevard bike lanes						< 5 years	\$250k - \$5M	City Engineering		*							
2.5d	Construct the Mount Prospect Avenue protected bike lanes						< 5 years	\$250k - \$5M	City Engineering		*							
2.5e	Implement the East Coast Greenway plan and identify potential additional greenways						On-Going	\$250k - \$5M	City Planning, City Engineering		*							

Objective #2: Local Accessibility, Pedestrians, and Bikes

CONNECT NEIGHBORHOODS TO ONE ANOTHER AND TO THE VARIOUS EMPLOYMENT, RECREATION, ENTERTAINMENT AND WATERFRONT DESTINATIONS WITHIN THE CITY

		Action	Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	Objective								
							1	2	3	4	5	6	7	8	9
2.5f		Require new development to provide bicycle amenities on the property and within the buildings	< 5 years	<\$250k	City Planning			*					7.2b	8.1c	
2.5g		Expand the current university bikeshare program to include other parking destinations throughout the City	< 5 years	<\$250k	City Engineering			*							
2.6		Improve the roadway connections to Newark Liberty International Airport (EWR) Station for local traffic													
2.6a		Improve connectivity and capacity along Haynes Avenue by facilitating and supporting NJDOT's Haynes Avenue project.	5 - 10 years	\$5M - \$50M	Mayor's Office, City Engineering	NJDOT		*	3.3a						
2.6b		Improve connectivity and capacity along McClellan Street by facilitating and supporting NJDOT's McClellan Street project.	5 - 10 years	\$5M - \$50M	Mayor's Office, City Engineering	NJDOT		*	3.3b						

Objective #3: Regional Connectivity

CONNECT THE CITY OUTWARD TO THE LOCAL, REGIONAL, GLOBAL
INFRASTRUCTURE AND THE OPPORTUNITIES THEY AFFORD

							Objective								
Action			Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	9
Improve access to/from employment centers and visitor destinations through better connections from the regional roadway network															
3.1	Promote improved utilization of existing vehicular gateways into the Downtown, including: •Elizabeth Clinton Avenue to/from I-78 •Raymond Boulevard to/from the NJ Turnpike and Route 1&9 •Springfield Avenue, Lyons Ave, and Central Ave to/from Garden State Parkway					On-Going	\$50M - \$500M	City Engineering	NJDOT, NJ Turnpike, Essex County	*	4.1g				
3.1b	Evaluate proposals for an Orange Street Connector to/from I-280					On-Going	\$250k - \$5M	City Planning, City Engineering	NJDOT	*	4.1f				
3.1c	Explore the continuation of the widening of Mulberry Street between Green Street and Route 21 for use as an alternative route to Broad Street.					On-Going	<\$250k	City Engineering	NJDOT	*	4.1b				
3.2 Increase the capacity and improve the traffic operating conditions of the regional roadway network serving Newark															
3.2a	Facilitate and support NJDOT's modernization of Route 21 between Edison Place and Murray Street consistent with the pertinent City Council resolution					On-Going	\$5M - \$50M	Mayor's Office, City Engineering	NJDOT	*	4.1c				
3.2b	Facilitate and support NJDOT with the programming and completion of the Route 21/I-280 interchange project					On-Going	\$50M - \$500M	Mayor's Office, City Engineering	NJDOT	*	4.1d				
3.2c	Facilitate and support NJDOT's programming of Route 21 geometric and safety improvements at the north end of the City (e.g. improved alignment and waterfront access).					On-Going	\$50M - \$500M	Mayor's Office, City Engineering	NJDOT	*	4.1e				
3.2d	Evaluate and consider potential roadway/intersection improvements for high congestion areas (as identified in the regional traffic model).					On-Going	TBD	City Engineering	NJDOT, NJ Turnpike, Essex County	*					
3.3 Improve physical connections between Frelinghuysen Avenue, the airport, and the port area															
3.3a	Improve connectivity and capacity along Haynes Avenue by facilitating and supporting NJDOT's Haynes Avenue project.					5 - 10 years	\$5M - \$50M	City Engineering, Mayor's Office	NJDOT	*	2.6a				
3.3b	Improve connectivity and capacity along McClellan Street by facilitating and supporting NJDOT's McClellan Street project.					5 - 10 years	\$5M - \$50M	City Engineering, Mayor's Office	NJDOT	*	2.6b				

Objective #3: Regional Connectivity

CONNECT THE CITY OUTWARD TO THE LOCAL, REGIONAL, GLOBAL
INFRASTRUCTURE AND THE OPPORTUNITIES THEY AFFORD

		Action		Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	Objective										
3.4		Extend PATH from Newark Penn Station to Newark Liberty International Airport (EWR) Station, with additional Newark stops considered.																
3.4a	Work with the Newark Regional Business Partnership (NRBP), Regional Plan Association (RPA), PANYNJ and others to advance evaluations, plans, and financing			> 10 years	> \$500M	Mayor's Office, City Planning, City Engineering	RPA, PANYNJ, NJ TRANSIT, NRBP	1.18a		*						9.2b		
3.5		Improve connections and access from Newark's neighborhoods to the regional transit system through bus and light rail systems																
3.5a	Investigate the creation of a bus transfer facility at the Newark Liberty International Airport station and review fare structure for employees			5 - 10 years	<\$250k	City Planning	NJ TRANSIT, PANYNJ	1.12d		*								
3.5b	Provide and/or maintain appropriate and safe sidewalks, crosswalks, and bike facilities adjacent to stations/stops.			On-Going	TBD	City Engineering	NJ TRANSIT, NJDOT, Meadowlark, Universities			*								
3.6		Work with NJ TRANSIT to expand the Go Bus system to provide connections between neighborhoods and job centers.																
3.6a	Expand the Go Bus program by extending the existing Go Bus routes and adding additional routes to serve City neighborhoods and suburban communities for internal and external destinations			5 - 10 years	\$5M - \$50M	City Planning, City Engineering	NJ TRANSIT			*								

Objective #4: Traffic Circulation

ADEQUATELY ACCOMMODATE VEHICULAR TRAFFIC
AND MINIMIZE CONGESTION ALONG THE CITY STREETS
AND THE REGIONAL ROADWAY SYSTEM

Objective															

Objective #4: Traffic Circulation

ADEQUATELY ACCOMMODATE VEHICULAR TRAFFIC
AND MINIMIZE CONGESTION ALONG THE CITY STREETS
AND THE REGIONAL ROADWAY SYSTEM

Action		Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	Objective								
						1	2	3	4	5	6	7	8	9
4.4d	Limit commuter parking in the downtown through zoning and land use regulations	< 5 years	<\$250k	City Planning, City Council					*			7.1e		
4.4	Improve the movement of traffic through the use of adaptive traffic signal systems													
4.4a	Complete the downtown pilot project for adaptive traffic signal systems	5 - 10 years	\$250k - \$5M	City Engineering	NJDOT				*					
4.4b	Obtain funding for the establishment of a Traffic Control Center	< 5 years	<\$250k	City Engineering, City Officials	NJDOT				*					
4.4c	Work with NJDOT to optimize signal timing along Route 21 corridor	< 5 years	<\$250k	City Engineering	NJDOT		2.1b		*					
4.4d	Work with Essex County to optimize signal timing along County roadways and at the gateways into the City	< 5 years	<\$250k	City Engineering	Essex County		2.1b		*					
4.4e	Coordinate traffic signals to optimize timing and create uniform traffic flow conditions and minimize congestion	On-Going	<\$250k	City Engineering	NJDOT, Essex County		2.1b		*	5.7b				
4.4f	Review signal timing on a routine basis to address changing conditions	On-Going	<\$250k	City Engineering	NJDOT, Essex County		2.1c		*					
4.4g	Utilize Intelligent Transportation Systems (ITS) strategies to operate and monitor intersections within a centralized traffic control center	On-Going	<\$250k	City Engineering	NJDOT, Essex County				*					
4.4h	Increase the use of Variable Message Signs (VMS) along the critical corridors	On-Going	<\$250k	City Engineering	NJDOT, Essex County				*					

Objective #4: Traffic Circulation

ADEQUATELY ACCOMMODATE VEHICULAR TRAFFIC
AND MINIMIZE CONGESTION ALONG THE CITY STREETS
AND THE REGIONAL ROADWAY SYSTEM

							Objective								
Action			Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	9
4.5	Encourage and enforce the use of designated truck routes														
4.5a	Clearly designate truck routes via upgraded signing throughout the city			< 5 years	<\$250k	City Engineering	NIDOT, Essex County				*	5.8a			
4.5b	Improve traffic flow along truck routes by providing coordinated traffic signal systems			< 5 years	<\$250k	City Engineering	NIDOT, Essex County				*	5.8b			
4.5c	Enforce the use of designated truck routes through the city			On-Going	<\$250k	City Police Department		2.1a			*	5.8c			
4.5d	Enforce anti-idling laws for trucks throughout the city			On-Going	<\$250k	City Police Department					*	5.8d			
4.5e	Designate overnight truck parking facilities in or near the Port			< 5 years	<\$250k	City Planning, City Engineering	PANYNJ				*				
4.6	Retain the existing street network and the traffic circulation benefits afforded by the city grid														
4.6a	Encourage provision of secondary access points to minimize reliance on a single driveway			< 5 years	<\$250k	City Planning, City Engineering					*				
4.6b	Develop access management plans for key corridors (encourage shared access and cross access agreements between adjacent property owners to minimize curb cuts)			< 5 years	<\$250k	City Planning, City Engineering					*				
4.6c	Discourage cul-de-sac design for new residential development			< 5 years	<\$250k	City Planning, City Engineering					*				

Objective #5: Safety

IMPROVE THE SAFETY OF THE STREETS AND INTERSECTIONS FOR ALL USERS

Objective															
Action					Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8
5.1 Improve vehicular safety throughout the city															
5.1a	Conduct intersection safety audits at high crash locations				5 - 10 years	\$250k - \$5M	City Engineering	NJDOT, NJTPA					*		
5.1b	Advance recommendations from the NJTPA Regional Safety Priority Location Report				<5 years	\$250k - \$5M	City Engineering, City Officials	NJDOT					*		
5.1c	Expand the existing Project Red Light camera enforcement program				<5 years	<\$250k	City Engineering	NJDOT					*		
5.1d	Ensure that traffic signal phasing and timing are in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) guidelines and are appropriate for each intersection				<5 years	<\$250k	City Engineering	NJDOT, PANYNJ					*		
5.1e	Ensure compliance with traffic safety laws (e.g. cell phone usage, seatbelts, stop for pedestrians in crosswalks, pedestrian jaywalking)				On-Going	<\$250k	City Police Department						*		
5.1f	Develop a traffic safety education program for all drivers and pedestrians (particularly young and old)				<5 years	<\$250k	City Police Department, City Engineering, City Schools	NJDOT, University Community					*		
5.1g	Ensure that appropriate sight lines are provided at each intersection				<5 years	TBD	City Engineering	NJDOT, PANYNJ					*		
5.1h	Explore expansion of the wayfinding signage program to other areas of the city				<5 years	<\$250k	City Officials, City Engineering						*		
5.2 Improve safety and access to bus stops															
5.2a	Develop City-wide guidelines and standards for bus shelters, considering ADA compliance, personal safety and security as key criteria				<5 years	<\$250k	City Engineering, Mayor's Office						*		
5.2b	Based on city-wide standards, upgrade existing and add new bus shelters at key bus stops				<5 years	<\$250k	Mayor's Office, City Engineering	NJ TRANSIT, Essex County					*		

Objective #5: Safety

IMPROVE THE SAFETY OF THE STREETS AND INTERSECTIONS FOR ALL USERS

		Action	Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	Objective							
							1	2	3	4	5	6	7	8
5.3		Develop a context-sensitive “complete streets” policy and program, including design standards, land use plans, and zoning regulations, that provides the highest level of integration between pedestrians, cyclists, and transit riders as appropriate based on surrounding land use and street types												
5.3a		Develop and adopt a citywide “complete streets” policy for Council adoption	<5 years	<\$250k	Mayor's Office, City Engineering, City Planning, City Elected Officials	NIDOT		2.2a			*			
5.3b		Create “complete streets” guidelines	<5 years	<\$250k	City Engineering, City Planning,			2.2b			*			
5.3c		Develop a program for the implementation of recommended complete streets investments	<5 years	<\$250k	City Engineering, City Planning	NIDOT		2.2c			*			
5.4		Improve bicycle safety throughout the city												
5.4a		Develop a bike facility plan and design guidelines	<5 years	<\$250k	City Engineering, Mayor's Office	NIDOT, NJTPA		2.5a			*			
5.4b		Create a bicycle safety education program within the Newark Public School system	<5 years	<\$250k	City Engineering, City Police Department, Mayor's Office, Board of Education	NIDOT, NJTPA, University Community					*			
5.5		Adopt new pedestrian safety initiatives and expand upon existing pedestrian safety initiatives throughout the city												
5.5a		Implement and expand the Safe Routes to Schools program	<5 years	\$250k - \$5M	City Planning, City Engineering	NIDOT		2.4g			*			
5.5b		Devise a Safe Routes to Transit program	<5 years	\$250k - \$5M	City Engineering, City Planning	NI TRANSIT, NIDOT		2.4h			*			
5.5c		Work with residents and the student population to identify pedestrian safety issues within neighborhoods	<5 years	<\$250k	City Engineering, Mayor's Office	University Community					*			
5.6		Improve sidewalk and crosswalk conditions throughout the city, as prioritized within the Safe Routes to Schools and proposed Safe Routes to Transit programs												
5.6a		Adopt a capital improvement plan that identifies and addresses necessary sidewalks, curb, handicap accessible ramp, and crosswalk repairs utilizing Newark's Right-of-Way software program	<5 years	<\$250k	City Engineering	NIDOT, PANYNJ					*			
5.6b		Incorporate curb extensions where feasible to shorten crossing distances and make crosswalks more visible	<5 years	\$250k - \$5M	City Engineering	NIDOT, PANYNJ					*			
5.6c		Ensure that pedestrian crossing times are appropriate and in accordance with the latest requirements at all traffic signals and install additional pedestrian countdown signals	<5 years	<\$250k	City Engineering	NIDOT, PANYNJ					*			
5.6d		Create lighting standards (including the use of LED fixtures) that improve safety and visibility; focus on sidewalks, major public gathering spaces, and along major pedestrian corridors throughout the city	<5 years	<\$250k	City Engineering	NIDOT, PANYNJ					*			
5.6e		Provide safe pedestrian accommodations across all bridge structures	<5 years	TBD	City Engineering	NIDOT, NI TRANSIT, PANYNJ		2.4j			*			

Objective #5: Safety

IMPROVE THE SAFETY OF THE STREETS AND INTERSECTIONS FOR ALL USERS

										Objective							
Action					Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	
5.7	Ensure vehicle speeds are safe and appropriate throughout the city and especially in residential neighborhoods																
5.7a	Implement the traffic calming recommendations identified for the Central and West Wards, and expand the program to all wards	5 - 10 years	\$250k - \$5M	City Engineering	NIDOT								*				
5.7b	Coordinate traffic signals to optimize timing and create uniform traffic flow conditions and minimize congestion	On-Going	<\$250k	City Engineering	Essex County, NIDOT		2.1b		4.4e	*							
5.7c	Consider the implementation of automated speed limit enforcement	<5 years	<\$250k	City Police Department, City Engineering						*							
5.7d	Expand the installation of flashing speed limit signs adjacent to schools	<5 years	<\$250k	City Engineering						*							
5.7e	Ensure context sensitive and appropriate design of new streets	On-Going	<\$250k	City Engineering, City Planning	NIDOT					*							
5.8	Encourage and enforce the use of truck routes																
5.8a	Clearly designate truck routes via upgraded signing throughout City	<5 years	<\$250k	City Engineering	Essex County, NIDOT				4.5a	*							
5.8b	Improve traffic flow along truck routes by providing coordinated traffic signal system	<5 years	<\$250k	City Engineering	Essex County, NIDOT				4.5b	*							
5.8c	Enforce the use of designated truck routes through the City	On-Going	<\$250k	City Police Department			2.1a		4.5c	*							
5.8d	Enforce anti-idling laws for trucks, particularly in areas that are in close proximity to residential neighborhoods	On-Going	<\$250k	City Police Department					4.5d	*							
5.9	Maximize access and mobility for seniors and the mobility-impaired																
5.9a	Design street signage and street crossings to accommodate the needs of the elderly and mobility-impaired populations	<5 years	<\$250k	City Engineering	NIDOT					*							
5.9b	Develop citywide ADA transition plan to ensure compliance for all public transit stations, sidewalks, street crossings, and building entrances	<5 years	TBD	City Engineering	NJ TRANSIT, NIDOT, AMTRAK, PANYNJ		2.4k			*							
5.9c	Working with NJ TRANSIT, ensure adequate para-transit services for seniors and the mobility impaired	On-Going	<\$250k	City Officials	EZ Ride, NJ TRANSIT					*							

Objective #6: Freight

FACILITATE THE MOVEMENT OF FREIGHT THROUGH THE PORT NEWARK/ELIZABETH AND NEWARK LIBERTY INTERNATIONAL AIRPORT AREAS VIA ENHANCED FREIGHT ACCESS AND INDUSTRIAL LAND USE POLICIES WHICH SUPPORT THE CONTINUED ECONOMIC GROWTH OF THESE VITAL ASSETS

Objective									
	1	2	3	4	5	6	7	8	9
	Outside Lead Implementing Agency	City Department Lead	Cost	Timeframe	Action				
Improve the physical constraints on local roadways that hinder the growth of the port, airport and other industrial areas of the city									
6.1									
6.1a	NIDOT, Essex County	City Engineering	\$250k - \$5M	5 - 10 years	Incorporate sufficient geometric considerations for truck access in any future roadway improvements on designated truck routes; to the extent possible, ensure that minimum design standards for vertical clearance and heavy load roadways based on access needs for modern trucks (53 feet long, 102 inches wide) are met when improvements are made on these roadways	*			
6.1b		City Engineering	\$250k - \$5M	> 10 years	Eliminate height restriction on Avenue P under the former CNJ Newark and New York Railroad alignment	*			
6.1c	AMTRAK	City Engineering	\$5M - \$50M	> 10 years	Enhance connectivity between Route 1&9 and the industrial area bordered by Amtrak's Northeast Corridor and Frelinghuysen Avenue by widening the Northeast Corridor overpass at McClellan Street and raising the vertical clearance	*			
6.1d		City Engineering	\$5M - \$50M	> 10 years	Improve geometric conditions and make operational improvements to enhance access to industrial sites along east-west roadways north of the airport, including Foundry Street, Wilson Avenue, and Delancey Street; these could include drainage improvements, roadway realignment, access control improvements, and potential new intersection controls at industrial driveways	*			
6.1e		City Engineering	TBD	> 10 years	In coordination with local stakeholders, develop a maintenance program for roads and bridge freight routes to ensure they can accommodate current and future freight activities related to economic trends and major projects of regional significance (e.g., Panama Canal expansion, raising of Bayonne Bridge air draft, and capacity improvements at Newark Liberty International (EWR) Airport)	*			
Engage implementing agencies by getting involved in a stakeholder role on major transportation projects that have potential local benefits and/or adverse impacts									
6.2a	NIDOT, NJTA	Mayor's Office, City Engineering	>\$500M	5 - 10 years	Support the long-term initiative to improve the NJ Turnpike interchange 15E, Route 1&9, and the Pulaski Skyway (as part of the Pulaski Skyway rehabilitation project), and identify local access needs for nearby industrial sites	*			
6.2b	NIDOT	Mayor's Office, City Engineering	>\$500M	5 - 10 years	Support and promote two key projects in the NIDOT Portway initiative, including the Doremus Avenue interchange with Route 1&9 and the new Passaic River Bridge crossing to the South Kearny peninsula	*			
6.2c	NIDOT, NJTA	Mayor's Office, City Engineering	>\$500M	5 - 10 years	Support and promote key projects in the NIDOT Portway Extensions initiative, including improvements at NJ Turnpike interchange 14 and the interim Newark Bay Bridge improvement	*			
6.2d	PANYNJ	Mayor's Office, City Engineering	>\$500M	5 - 10 years	Support and promote the ongoing effort by the Port Authority of NY&NJ (PANYNJ) to raise the Bayonne Bridge to increase navigational clearance restrictions	*			
6.2e	PANYNJ	Mayor's Office	\$250k - \$5M	On-Going	Actively engage the Port Authority of NY&NJ (PANYNJ) on an ongoing basis to identify changes in cargo activity at the airport complex related to the raising of the Bayonne Bridge and other major projects and economic trends	*			
6.2f	PANYNJ	Mayor's Office, City Engineering	\$250k - \$5M	On-Going	Actively engage the Port Authority of NY&NJ (PANYNJ) to assess local benefits and impacts of any proposed upgrades and enhancements to increase capacity at Newark Liberty International Airport	*			9.1a
6.2g		Mayor's Office, City Engineering	\$250k - \$5M	On-Going	Play an active role in organizations where Newark has a strong presence and a vested interest in ongoing efforts, such as the North Jersey Transportation Planning Authority (as a Subregion, Newark is represented on the NJTPA's Board of Trustees and committees), the Newark Regional Business Partnership (NRBP) and the Newark Alliance. The City should explore the potential for future appointments to the Board of Commissioners for the Port Authority of NY&NJ, the New Jersey Turnpike Authority, and other state agencies, such as the New Jersey Economic Development Authority and the New Jersey Redevelopment Agency	*			

Objective #6: Freight

FACILITATE THE MOVEMENT OF FREIGHT THROUGH THE PORT NEWARK/ELIZABETH AND NEWARK LIBERTY INTERNATIONAL AIRPORT AREAS VIA ENHANCED FREIGHT ACCESS AND INDUSTRIAL LAND USE POLICIES WHICH SUPPORT THE CONTINUED ECONOMIC GROWTH OF THESE VITAL ASSETS

Identify industrial development opportunities in the port area that can capitalize on freight railroad alignments											
6.3	Promote the development of industrial parcels in the Newark Industrial District at rail-accessible sites	5 - 10 years	\$50M - \$500M	Mayor's Office, Brick City Development							
6.3a	Engage railroad industry representatives at Conrail, CSX, Norfolk Southern, and Canadian Pacific Railways to explore potential rail-oriented industrial development in the vicinity of Oak Island Yard	5 - 10 years	<\$250k	Mayor's Office, Brick City Development							
6.3b	Identify off-airport air cargo facility needs that may result from the displacement of existing on-airport facilities under proposed runway or terminal expansion initiatives at Newark Liberty International Airport	5 - 10 years	<\$250k	Mayor's Office, City Planning, Brick City Development							
6.3c											

Objective #7: Parking

BALANCE THE PARKING NEEDS AND DESIRES OF VARIOUS USERS
(RESIDENTS, STUDENTS, WORKFORCE, AND DOWNTOWN)

							Objective								
Action			Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	9
7.1	Develop a parking management plan for the Downtown that encourages transit and reduces reliance on the automobile														
	Reduce the parking requirements for the properties located within the redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes	< 5 years	<\$250k	City Planning, Mayor's Office		1.6a				4.3c			*	8.1b	
7.1a	Develop appropriate parking standards for new development to be consistent with the Land Use Element recommendations and the proposed zoning changes.	< 5 years	<\$250k	City Planning, Mayor's Office						4.3a			*		
7.1b	Limit commuter parking in the downtown through zoning and land use regulations	< 5 years	<\$250k	City Planning, City Council						4.3d			*		
7.1c	Consider increases in parking taxation for the public parking facilities located within the redevelopment plan areas in the downtown	< 5 years	<\$250k	City Planning, Mayor's Office		1.6b							*		
7.1d	Encourage the creation of intercept parking facilities outside of the Downtown at the Orange Street Light Rail Station, the Newark Liberty International Airport (EWR) Station, and at Route 21 if Newark Light Rail is extended over the abandoned Boonton Line	5 - 10 years	\$5M-\$50M	City Planning, Urban Enterprise Zone	NJ TRANSIT, PANYNJ					4.3b			*	8.1c	
7.1e	Encourage employers to utilize Transportation Demand Management (TDM) strategies, including shared parking, employee parking cash outs, transit benefits, and ride share programs	< 5 years	<\$250k	City Planning	EZ Ride								*		
7.1f	Encourage the development of structured parking that can be used by both downtown office and residential / visitor populations (i.e., shared parking)	5 - 10 years	<\$250k	City Planning									*		
7.1g	Encourage joint parking facilities and mixed-use parking structures with streetscape-appropriate uses (e.g., retail, residential) fronting streets and pedestrian areas	< 5 years	<\$250k	City Planning									*		
7.1h	Allow surface parking as a conditional/interim use as properties are assembled for higher use development	< 5 years	<\$250k	City Planning									*		
7.1i															
7.2	Use zoning and land use regulations to identify and regulate the appropriate amount of parking														
	Allow and encourage increased densities and reduced parking requirements at and near transit facilities	< 5 years	<\$250k	City Planning									*	8.1a	
7.2a	Require new development to provide bicycle amenities on the property and within the buildings	< 5 years	<\$250k	City Planning			2.5f						*	8.1d	
7.2b	Encourage the expansion of car sharing locations on public and private property by relaxing the zoning/parking standards that would preclude the use	< 5 years	<\$250k	City Planning						4.2d			*	8.1e	

Objective #8: Land Use Coordination

COORDINATE LAND USE POLICY AND TRANSPORTATION PLANNING

							Objective												
			Action		Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency			1	2	3	4	5	6	7	8	9
Use zoning and land use regulations to reduce vehicle demand in the downtown and concentrate development around transit stations																			
8.1																			
8.1a	Allow and encourage increased densities and reduced parking requirements at and near transit facilities				< 5 years	<\$250k	City Planning										7.2a	*	
8.1b	Reduce the parking requirements for the properties located within the redevelopment plan areas in the downtown to be consistent with the Land Use Element recommendations and the proposed zoning changes				< 5 years	<\$250k	City Planning, Mayor's Office		1.6a				4.3c				7.1a	*	
8.1c	Encourage the creation of intercept parking facilities outside of the Downtown at the Orange Street Light Rail Station, the Newark Liberty International Airport (EWR) Station, and at Route 21 if Newark Light Rail is extended over the abandoned Boonton Line				5 - 10 years	\$5M - \$50M	City Planning, Urban Enterprise Zone	NJ TRANSIT, PANYNJ					4.3b				7.1e	*	
8.1d	Require new development to provide bicycle amenities on the property and within the buildings				< 5 years	<\$250k	City Planning			2.5f							7.2b	*	
8.1e	Encourage the expansion of car sharing locations on public and private property by relaxing the zoning/parking standards that would preclude the use				< 5 years	<\$250k	City Planning						4.2d				7.2c	*	
Encourage Transit Oriented Development (TOD) and use of Urban Transit Hub program at all appropriate station locations, with an emphasis on Newark Penn, Broad Street, Orange Street and Newark Liberty International Airport stations																			
8.2a	Work with NJ TRANSIT to identify potential TOD opportunities at all existing stations and major bus hubs				< 5 years	<\$250k	City Planning, Economic Development, Brick City Development Corp	NJ TRANSIT		1.2a								*	
8.2b	Identify and secure available funding sources and incentives, including re-use of the abandoned CNJ Broad Street rail bridge for a traffic free pedestrian crossing				On-Going	<\$250k	City Planning, Economic Development, Brick City Development Corp	NJ TRANSIT, PANYNJ		1.2b								*	
8.2c	Develop a marketing program to encourage Newark TOD opportunities				< 5 years	<\$250k	City Planning, Economic Development, Brick City Development Corp			1.2c								*	
8.2d	Market and assemble properties appropriate for TOD				5 - 10 years	TBD	Brick City Development Corp	NJ TRANSIT, PANYNJ		1.2d								*	
8.2e	Create a clearing house to assist TOD developers				On-Going	<\$250k	Brick City Development Corp			1.2e								*	

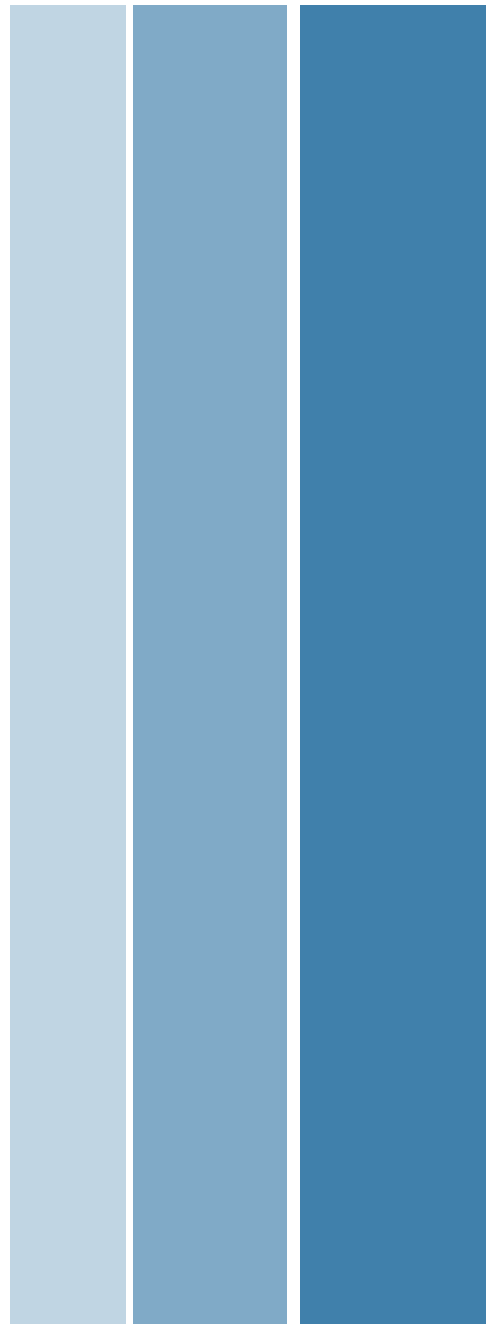
Objective #9: Air Travel

FACILITATE THE MOVEMENT OF PASSENGERS THROUGH NEWARK
LIBERTY INTERNATIONAL AIRPORT VIA ENHANCED TRANSIT
ACCESS AND IMPROVEMENTS IN ROADWAY CIRCULATION

						Objective								
Action		Timeframe	Cost	City Department Lead	Outside Lead Implementing Agency	1	2	3	4	5	6	7	8	9
Actively engage key stakeholders to identify future airport activities, including airport improvements and expansions that have major implications for Newark														
9.1	Participate in stakeholder meetings and other activities associated with the Port Authority of NY&NJ's (PANYNJ) ongoing regional airport capacity study	5 - 10 years	<\$250k	Mayor's Office, City Planning	PANYNJ						6.2f			*
9.1b	Identify opportunities for intercity rail service improvements that could alleviate airport congestion by reducing short-distance air travel to/from Newark Liberty International Airport (EWR)	On-Going	<\$250k	City Planning	AMTRAK									*
Promote non-auto access to Newark Liberty International Airport (EWR) through the development of transit alternatives														
9.2a	Work with NJ TRANSIT and the Port Authority of NY&NJ to identify potential enhancements to bus and rail transit service and appropriate fares	On-Going	\$250k - \$5M	City Planning	NJ TRANSIT, PANYNJ									*
9.2b	Work with the Newark Regional Business Partnership (NRBP), Regional Plan Association (RPA), PANYNJ, and others to advance evaluations, plans, and financing	> 10 years	> \$500M	Mayor's Office, City Planning, City Engineering	RPA, NJ TRANSIT, PANYNJ, NRBP	1.18a		3.4a						*
9.2c	Identify off-airport transit improvements at existing or new transit facilities, such as the accommodation of air travelers at outlying rail parking lots that could enhance transit access to/from Newark Liberty International Airport	On-Going	\$250k - \$5M	City Planning	NJ TRANSIT									*
9.2d	Work with existing airport-related businesses at off-airport locations to develop and enhance transit access for airport passengers (e.g., location of employee hotels in the City or near outlying NEC stations, shuttle buses)	On-Going	\$250k - \$5M	Brick City Development Corp										*
Identify airport-related redevelopment opportunities in the vicinity of Newark Airport														
9.3a	Work with NJ TRANSIT, Port Authority of NY&NJ, and the Federal Aviation Administration to identify potential legal constraints to expanded usage of Newark Liberty International Airport rail station from outside airport and rail system	On-Going	\$250k - \$5M	Mayor's Office, City Planning	PANYNJ, FAA									*
9.3b	Identify high-profile airport-oriented development opportunities (e.g., hotels, conference facilities, convention center adjacent to EWR station) that provide economic benefits to Newark and can integrate transit accessibility to/from the airport	On-Going	\$250k - \$5M	City Planning, Brick City Development										*

Appendix: Traffic Volume Data

A



**Newark Master Plan
Mobility Element**

Traffic Data Summary Table 1

SSE Project No. NW-09-252

SSE ATR's MAY 2011

Primary Road	Cross Street	Approach Direction	Type of Count	Date	AM PSH	PM PSH	Daily	Sat PSH	Sat Daily
Clay Street Bridge		EB	ATR	May 2011	272	625	6596	715	8573
Clay Street Bridge		WB	ATR	May 2011	396	427	5104	360	4617
Bridge Street Bridge		EB	ATR	May-11	430	766	9357	655	8313
Bridge Street Bridge		WB	ATR	May-11	438	454	5519	450	6682
Jackson Street Bridge		NB	ATR	May-11	678	875	12680	1009	14592
Jackson Street Bridge		SB	ATR	May-11	613	684	9596	691	10141
Broad Street	Tichenor	NB	ATR	May-11	928	1045	12587	654	7732
Broad Street	Tichenor	SB	ATR	May-11	506	1330	13534	785	10803
Broad Street	New	NB	ATR	May-11	546	921	9732	831	9827
Broad Street	New	SB	ATR	May-11	891	1077	12795	703	10804
Market Street	Broad	EB	ATR	May-11	499	521	7577	488	5945
Market Street	Broad	WB	ATR	May-11	342	573	7176	251	4595
Raymond Blvd	Mulberry	EB	ATR	May-11	687	789	10729	508	8921
Raymond Blvd	Mulberry	WB	ATR	May-11	799	865	11978	638	11134
Raymond Blvd	Washington	EB	ATR	May-11	378	315	4800	294	3002
Raymond Blvd	Washington	WB	ATR	May-11	379	525	5970	296	4778
Mulberry	Walnut	NB	ATR	May-11	351	186	3200	287	3272
Mulberry	Walnut	SB	ATR	May-11	306	659	6678	357	5299
Washington	New	NB	ATR	May-11	558	972	10356	697	7154
University	James	SB	ATR	May-11	683	489	6970	415	5015
MLK	Central	NB	ATR	May-11	299	687	7162	458	5834
MLK	Central	SB	ATR	May-11	378	431	5744	452	4621
Orange	University	EB	ATR	May-11	319	384	4781	330	3900
Orange	University	WB	ATR	May-11	279	389	3811	169	2069
Nesbitt	Rt 280	NB	ATR	May-11	192	645	6339	384	4562
Nesbitt	Rt 280	SB	ATR	May-11	128	430	4230	256	3042
Central	University	EB	ATR	May-11	306	421	5597	447	4481
Central	University	WB	ATR	May-11	439	759	7033	408	4776
Elizabeth	Clinton	NB	ATR	May-11	922	633	9875	530	7700
Elizabeth	Clinton	SB	ATR	May-11	459	720	8921	500	6628
Irvine Turner	18th	NB	ATR	May-11	501	450	6513	475	5779
Irvine Turner	18th	SB	ATR	May-11	385	736	7973	739	7894
Bergen	18th	NB	ATR	May-11	404	658	9306	911	10153
Bergen	18th	SB	ATR	May-11	263	573	8143	637	8429

Notes:

ATR = Automatic Traffic Recorder

PSH = Peak Street Hour

**Newark Master Plan
Mobility Element**

Traffic Data Summary Table 2

SSE Project No. NW-09-252

NJ DOT ATR's

Primary Road	Cross Street	Approach Direction	Type of Count	Date	AM PSH	PM PSH	Daily
Grove	Vernon	NB	DOT ATR	Dec-09	205	306	3867
Grove	Vernon	SB	DOT ATR	Dec-09	264	224	3740
Northfield	Hudson	EB	DOT ATR	Dec-09	641	495	7530
Northfield	Hudson	WB	DOT ATR	Dec-09	303	553	6466
Bloomfield	Rt 21	EB	DOT ATR	Apr-09	830	1044	14331
Bloomfield	Rt 21	WB	DOT ATR	Apr-09	639	597	9290
Rt 78	East of Clinton-Hillside	EB	DOT ATR	Jul-08	2892	3361	46019
Rt 78	East of Clinton-Hillside	WB	DOT ATR	Jul-08	3151	3022	46474
South Orange Avenue	Munn	EB	DOT ATR	Apr-07	792	749	12227
South Orange Avenue	Munn	WB	DOT ATR	Apr-07	933	1302	19142
South Orange Avenue	Ashland	EB	DOT ATR	Sep-07	773	524	9421
South Orange Avenue	Ashland	WB	DOT ATR	Sep-07	642	632	10436
7th	Clifton	EB	DOT ATR	Apr-07	222	243	3946
7th	Clifton	WB	DOT ATR	Apr-07	131	143	2239
14th Avenue	15th Street	EB	DOT ATR	Mar-08	314	224	3701
14th Avenue	15th Street	WB	DOT ATR	Mar-08	142	234	3024
Corbin	Dock	NB	DOT ATR	Oct-07	990	620	13193
Corbin	Dock	SB	DOT ATR	Oct-07	378	462	11544
Lake	2nd Avenue	NB	DOT ATR	Mar-07	214	341	4469
Lake	2nd Avenue	SB	DOT ATR	Mar-07	256	230	3898
Lafayette	Prospect	EB	DOT ATR	Apr-07	263	383	5574
Lafayette	Prospect	WB	DOT ATR	Apr-07	209	276	4060
Rt 21	Mulberry	NB	DOT ATR	Oct-08	1828	1440	27719
Rt 21	Mulberry	SB	DOT ATR	Oct-08	1503	1777	30152
Market Street	Halsey	EB	DOT ATR	Apr-07	649	519	8689
Market Street	Halsey	WB	DOT ATR	Apr-07	451	675	8704
Rt 22	Broad	EB	DOT ATR	Apr-06	2939	2156	40760
Rt 22	Broad	WB	DOT ATR	Apr-06	1873	2401	36216
Rt 22	Meeker	EB	DOT ATR	Aug-08	2724	1985	38113
Rt 22	Meeker	WB	DOT ATR	Aug-08	1748	2397	34768
Port	Doremus	NB	DOT ATR	Aug-09	563	465	9320
Port	Doremus	SB	DOT ATR	Aug-09	597	536	9536
Rt 21	Riverside	NB	DOT ATR	Oct-09	2034	3373	41952
Rt 21	Riverside	SB	DOT ATR	Oct-09	2940	2550	40405
Rt 1&9 Pulaski Skyway	East of NJ Tpk	NB	DOT ATR	Oct-09	2008	2589	35358
Rt 1&9 Pulaski Skyway	East of NJ Tpk	SB	DOT ATR	Oct-09	2226	2115	30937
Rt 1&9	Haynes	NB	DOT ATR	Oct-09	3397	2807	54652
Rt 1&9	Haynes	SB	DOT ATR	Oct-09	3641	5322	77723
Rt 1&9	West of NJ Tpk	NB	DOT ATR	Nov-09	4016	3731	60992
Rt 1&9	West of NJ Tpk	SB	DOT ATR	Nov-09	3430	4396	62782

Notes:

ATR = Automatic Traffic Recorder

PSH = Peak Street Hour

**Newark Master Plan
Mobility Element**

Traffic Data Summary Table 3

SSE Project No. NW-09-252

VARIOUS MTM

Primary Road	Cross Street	Approach Direction	Type of Count	Date	AM PSH	PM PSH
Rt 21	Edison	NB	MTM	Mar-07		1452
Rt 21	Edison	SB	MTM	Mar-07		1405
Edison	Rt 21	EB	MTM	Mar-07		679
Rt 21	Market	NB	MTM	Mar-07		1592
Rt 21	Market	SB	MTM	Mar-07		1429
Market	Rt 21	EB	MTM	Mar-07		712
Market	Rt 21	WB	MTM	Mar-07		597
Bloomfield	MLK	EB	MTM	Feb-08	868	645
Bloomfield	MLK	WB	MTM	Feb-08	572	865
MLK	Bloomfield	NB	MTM	Feb-08	301	309
Crittenden	Bloomfield	SB	MTM	Feb-08	371	347
Park	Bloomfield	SB	MTM	Feb-08	384	177
Lyons	Bergen	EB	MTM	Dec-06	291	444
Lyons	Bergen	WB	MTM	Dec-06	256	279
Bergen	Lyons	NB	MTM	Dec-06	277	254
Bergen	Lyons	SB	MTM	Dec-06	312	444
MLK	Market	NB	MTM		447	446
MLK	Market	SB	MTM		475	460
MLK	Warren	NB	MTM		571	629
MLK	Warren	SB	MTM		661	515
Market	MLK	EB	MTM		716	641
Market	MLK	WB	MTM		634	845
Warren	MLK	EB	MTM		208	291
Warren	MLK	WB	MTM		215	258
South Orange Avenue	Bergen	EB	MTM	Nov-06		246
South Orange Avenue	Bergen	WB	MTM	Nov-06		180
Bergen	South Orange Avenue	NB	MTM	Nov-06		32
Bergen	South Orange Avenue	SB	MTM	Nov-06		111
Raymond Blvd	Chapel	WB	MTM	May-06	1458	883
Springfield	17th St	EB	MTM	Apr-10	1024	595
Springfield	17th St	WB	MTM	Apr-10	398	664
Doremus	South of NJ Tpk Ramp	NB	MTM		374	617
Doremus	South of NJ Tpk Ramp	SB	MTM		590	332
Irvine Turner	Muhammad Ali	NB	MTM	Nov-09	1108	508
Irvine Turner	Muhammad Ali	SB	MTM	Nov-09	530	867
Muhammad Ali	Irvine Turner	EB	MTM	Nov-09	281	170
Muhammad Ali	Irvine Turner	WB	MTM	Nov-09	225	282
Frelinghuysen	Evergreen	NB	ATR	Aug-08	680	520
Frelinghuysen	Evergreen	SB	ATR	Aug-08	252	539
University	Court Street	SB	MTM	Nov-06	539	1067
Rt 21	Gouverneur	NB	MTM	Apr-09		2273
Rt 21	Gouverneur	SB	MTM	Apr-09		2016
Nesbitt	Orange	NB	MTM	Jul-09	449	1087
Orange	Nesbitt	EB	MTM	Jul-09	594	311
Orange	Nesbitt	WB	MTM	Jul-09	289	710
Avenue P	Wilson	NB	MTM	Sep-05	136	198
Avenue P	Wilson	SB	MTM	Sep-05	140	136
Wilson	Avenue P	EB	MTM	Sep-05	209	174
Wilson	Avenue P	WB	MTM	Sep-05	210	247

Notes:

MTM = Manual Turning Movement recording

PSH = Peak Street Hour

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 1
Station ID: 9802
Clay Street Bridge (EB)
Latitude: 0' 0.000 Undefined

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 2
Station ID: 9805
Bridge Street Bridge (EB)
Latitude: 0' 0.000 Undefined

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 2

Station ID: 12143

Bridge Street Bridge (WB)

Latitude: 0' 0.000 Undefined

[illegible]

Site Code: 3
Station ID: 9800
Jackson Street Bridge (NB)
Latitude: 0' 0.000 Undefined

[illegible]

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Latitude: 0' 0.000 Undefined

[illegible][illegible]

Latitude: 0' 0.000 Undefined

[illegible]

Site Code: 4
Station ID: 20896
Broad ST b/w South ST & Tichenor ST (SB)

Latitude: 0' 0.000 Undefined

[illegible][illegible]

TechniQuest Corporation
 4105 US Route 1, Suite # 14
 Monmouth Junction, NJ 08852
 732.274.9500, Fax 732.274.9510

Site Code: 5
 Station ID: 11942
 Broad ST b/w W Park ST & New ST (NB)
 Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F15	93	50	38	48	148	347	601	669	571	568	554	492	642	673	878	1066	1189	832	552	508	134	128	138	138	5563	
S16	173	88	41	71	180	356	337	288	377	470	509	398	224	404	821	1058	1080	798	673	536	156	143	168	164	11143	
S17	53	41	27	49	125	259	240	200	344	377	383	277	156	279	599	596	434	312	275	228	226	236	166	124	9827	
M18	115	80	64	78	178	363	627	699	597	584	580	546	664	678	766	908	1092	680	512	394	338	296	178	108	6006	
T19	61	42	31	34	130	334	534	563	551	484	530	616	616	587	747	936	1044	773	460	327	285	268	165	75	11125	
W20	66	41	31	38	124	324	526	561	556	498	518	559	559	661	727	870	1023	686	480	392	330	316	189	129	10193	
T21	70	54	46	40	102	334	556	560	511	515	522	624	605	610	747	991	1114	859	561	393	350	*	*	*	10204	
F22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10164
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	631	396	278	358	987	2317	3421	3540	3507	3496	3596	3512	3466	3892	6158	7256	7634	5403	4254	3660	2504	1795	1244	920		
Day Totals	6006	11125	11125	10193	10204	15727	11143	11143	9827																	
# Days	6006	11125	11125	10193	10204	7864	11143	11143	9827																	
Average																										

Total for Month
 ADT for 8 days
 Total Weekdays
 Average Weekdays

74225
 9278
 58392
 9732

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Latitude: 0' 0.000 Undefined

[illegible][illegible]

Latitude: 0' 0.000 Undefined

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 7
Station ID: 12149
Raymond Blvd b/w RT 21 & Mulberry ST(EB)
Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total			
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
T14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
F15	209	120	69	62	111	247	484	723	984	847	682	654	615	695	480	515	601	683	556	629	513	548	473	348	5346			
S16	295	157	139	110	75	126	165	297	429	460	451	468	500	490	508	498	910	922	846	720	570	545	475	441	13362			
S17	196	137	98	93	55	82	130	172	186	233	324	339	374	392	449	480	416	386	441	358	365	325	266	219	8921			
M18	160	99	58	57	81	198	440	750	986	796	647	581	633	602	638	730	772	820	756	566	453	439	331	146	11739			
T19	84	82	52	42	77	177	387	736	934	769	576	552	590	607	701	703	765	854	727	527	455	444	299	141	11281			
W20	114	85	47	48	78	205	409	731	900	780	629	668	652	629	627	715	749	888	739	558	502	439	219	100	11511			
T21	113	103	59	61	96	223	425	747	918	793	655	684	677	647	657	739	775	918	753	586	503	*	*	*	11132			
F22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
Total	1171	783	522	473	573	1258	2440	4156	5337	4678	3964	3946	4041	4062	4765	5106	5454	5930	5357	4563	3880	3148	2459	1742				
Day Totals	Sun	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total for Month					ADT for 8 days					Total Weekdays					Average Weekdays				
# Days	6516	1	11739	11281	11511	16478	13362	8921	79808					9976					64371					10729				
Average	6516	1	11739	11281	11511	8239	13362	8921																				

TechniQuest Corporation

4105 US Route 1, Suite # 14
 Monmouth Junction, NJ 08852
 732.274.9500, Fax 732.274.9510

Site Code: 7
 Station ID: 6547
 Raymond Blvd b/w RT 21 & Mulberry ST(WB)
 Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily	
																									Total	
F 01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M 04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W 06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F 08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M 11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W 13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F 15	232	132	76	69	124	275	538	857	1186	970	758	727	722	823	783	866	967	924	953	703	541	609	543	393	7291	
S 16	404	194	172	136	93	155	204	367	528	570	522	578	618	583	638	852	1039	1025	939	800	633	606	528	490	15184	
S 17	242	170	121	115	67	101	162	213	230	288	401	418	460	484	555	592	506	478	538	443	452	399	328	269	8032	
M 18	177	111	64	62	89	220	489	874	1169	912	718	645	703	669	709	811	880	944	840	629	504	488	368	253	13328	
T 19	158	91	58	47	85	196	430	850	1103	858	730	640	657	696	778	821	899	970	804	586	506	448	343	261	13015	
W 20	127	95	52	54	86	228	455	827	1132	872	699	743	739	700	728	795	862	998	822	620	557	526	507	395	13619	
T 21	242	154	67	82	93	214	460	809	1130	879	704	692	712	822	796	861	716								9433	
F 22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M 25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W 27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F 29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S 30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1582	947	610	565	637	1389	2738	4797	6478	5349	4532	4443	4611	4777	5779	6229	6458	5907	5561	4626	3835	3592	3105	2489		
Day Totals	Sun	Sun	Mon	Tue	Wed	Thu	Thu	Fri	Sat	Total for Month				ADT for 8 days				Total Weekdays				Average Weekdays				
# Days	8032	1	13328	13015	13619	16724	16724	15184	11134	91036				11380				71870				11978				
Average	8032	1	13328	13015	13619	8362	8362	15184	11134	91036				11380				71870				11978				

[illegible]

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F15	125	68	44	34	51	97	185	351	476	414	318	342	344	366	380	378	464	493	488	343	277	664	624	335	4066	
S16	175	124	90	69	52	61	71	166	236	264	224	266	302	244	284	296	259	232	228	272	249	216	206	241	245	6852
S17	136	81	80	52	38	38	72	86	84	130	157	179	208	243	258	285	242	232	255	206	226	196	160	192	4778	
M18	86	56	48	32	38	85	196	348	465	399	313	287	371	313	377	439	460	491	510	340	258	267	173	144	3761	
T19	83	56	33	22	30	67	171	347	488	424	318	291	393	328	407	465	476	521	536	356	282	299	191	162	6496	
W20	112	72	78	46	66	103	216	362	491	429	329	313	428	372	428	509	503	588	554	372	335	318	312	253	7589	
T21	166	94	49	54	43	114	247	464	631	496	376	410	402	395	477	492	553	620	601	443	362	352	289	215	8345	
F22	132	86	68	53	53	107	158	235	291	296	214	214	214	214	214	214	214	214	214	214	214	214	214	214	1693	
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1015	637	490	362	371	672	1316	2359	3162	2852	2249	2088	2448	2261	2611	3274	3415	3677	3676	2652	2282	2598	2196	1663		

Day Totals	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total for Month:	
# Days	3761	6496	6746	7589	12411	8545	4778	50326	
Average	1	1	1	1	2	2	1	5592	
	3761	6496	6746	7589	6206	4273	4778	41787	
								5970	

Day Totals	Sun	Mon	Tue	Wed	Fri	Sat	Total for Month:
# Days	3761	6496	6746	7589	8545	4778	50326
Average	3761	6496	6746	7589	8545	4778	5592
							41787
							5970

Day	Daily																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T 14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F15	82	68	48	60	98	229	363	402	427	385	394	541	506	263	308	304	316	242	124	109	160	191	162	116	2524
S16	167	155	133	70	80	109	163	199	214	281	281	299	342	310	357	685	724	553	372	251	242	237	191	177	8147
S17	141	139	103	44	64	85	131	181	196	249	259	281	316	292	329	263	232	170	242	156	126	201	177	145	5299
M18	104	100	66	82	130	247	395	430	453	384	401	571	532	541	615	711	746	532	364	278	239	204	170	139	8414
T19	81	76	62	48	79	158	228	230	320	391	408	579	536	550	627	729	763	542	378	294	257	222	188	153	7899
W20	107	106	84	70	101	184	244	262	396	339	407	406	436	448	532	601	694	475	332	260	201	181	159	103	7118
T21	68	57	47	52	82	211	307	389	381	395	390	475	499	517	609	719	795	*	*	*	*	*	*	*	5963
F22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	750	701	543	426	634	1223	1821	2093	2387	2424	2540	3152	3386	3436	3974	4269	4488	2703	2082	1521	1364	1633	1342	994	
Day Totals	4522	8414		7899	7118	8487	8147	8147	5299			Total for Month:			49886										
# Days	1			1	1	2	1	1	5299			ADT for 8 days:			6236										
Average	4522	8414	1	7899	7118	4244	8147	8147	5299			Total Weekdays:			40065										
												Average Weekdays:			6678										

TechniQuest Corporation

4105 US Route 1, Suite # 14
 Monmouth Junction, NJ 08852
 732.274.9500, Fax 732.274.9510

Site Code: 11
 Station ID: 12362
 University Ave b/w James ST&Orange ST(SB)
 Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total		
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
T14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
F15	41	24	33	39	83	250	672	864	662	476	520	489	464	456	511	468	574	461	326	284	266	207	123	76	2317		
S16	80	65	39	39	39	95	164	369	415	320	322	443	357	281	326	267	226	209	176	170	163	177	173	100	8016		
S17	79	51	41	25	45	72	121	158	190	233	192	223	275	272	257	211	189	198	168	142	164	105	98	66	3575		
M18	40	28	14	40	90	255	622	899	764	512	465	511	438	450	497	527	512	397	310	243	210	137	85	47	8093		
T19	27	23	22	34	89	264	619	914	788	546	528	507	463	470	505	501	576	431	339	244	205	122	99	51	8367		
W20	31	21	18	30	73	203	419	564	657	446	478	505	457	484	500	500	529	397	306	282	244	128	98	78	7448		
T21	34	27	22	36	79	236	579	825	787	602	575	532	462	460	517	516	528	426	334	*	*	*	*	*	7577		
F22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Total	332	239	189	243	498	1375	3196	4593	4263	3135	3080	3210	2916	2873	3113	2990	3597	2910	2222	1574	1451	1045	839	525			
Day Totals	Sun	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total for Month:															50408			
# Days	3575	8093	8093	8367	7448	9894	8016	5015	ADT for 8 days															6301			
Average	3575	8093	8093	8367	7448	4947	8016	5015	Total Weekdays															41818			
									Average Weekdays															6970			

Total for Month: 50408
 ADT for 8 days: 6301
 Total Weekdays: 41818
 Average Weekdays: 6970

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Totals	3575	8093	8367	7448	9894	8016	5015
# Days	1	1	1	1	2	1	1
Average	3575	8093	8367	7448	4947	8016	5015

Latitude: 0' 0.000 Undefined

[illegible]

Site Code: 12
 Station ID: 20895
 MLK b/w Bleeker ST & Central Ave (SB)

Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F15	83	79	57	32	43	75	209	446	611	534	440	474	451	510	451	500	469	467	384	323	242	210	147	138	197
S16	106	78	60	42	32	49	96	141	322	452	336	358	327	311	330	314	263	200	191	207	138	141	70	57	7375
S17	54	47	30	26	25	40	63	94	115	230	213	254	266	270	312	327	247	220	226	202	186	155	117	96	4821
M18	48	47	18	19	37	81	200	425	608	502	490	488	510	452	471	427	443	508	357	300	238	165	120	102	7056
T19	53	32	18	18	34	58	178	394	598	492	480	470	464	420	436	409	389	434	399	252	213	174	124	100	6639
W20	59	24	24	13	39	71	197	387	586	498	463	456	472	435	414	426	448	477	418	340	237	166	120	126	6896
F21	71	35	31	26	43	62	184	334	545	480	439	475	414	449	427	425	402	470	428	358	202	*	*	*	6300
T22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	474	342	238	176	253	436	1127	2221	3385	3188	2861	2975	2904	2847	2841	2828	2661	2776	2403	1982	1456	1011	698	816	

Day Totals	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total for Month	42899
# Days	3815	7056	6639	6896	6497	7375	4621	ADT for 8 days	5362
Average	3815	7056	6639	6896	3249	7375	4621	Total Weekdays	34463
								Average Weekdays	5744

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Latitude: 0' 0.000 Undefined

[illegible]

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Page 1

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 15
Station ID: 12141
Central Ave b/w MLK & University Ave (WB)

Latitude: 0' 0.000 Undefined

Day	1							2							3							4							5							6							7							8							9							10							11							12							13							14							15							16							17							18							19							20							21							22							23							24							Daily Total																																																																																																																																																																																																																																																																																																																																																																																																																					
	F01	S02	S03	M04	T05	W06	T07	F08	S09	S10	M11	T12	W13	F14	S15	M16	T17	W18	F19	S20	M21	T22	W23	F24	S25	M26	T27	W28	F29	S30	S31	M32	T33	W34	F35	S36	M37	T38	W39	F40	S41	M42	T43	W44	F45	S46	M47	T48	W49	F50	S51	M52	T53	W54	F55	S56	M57	T58	W59	F60	S61	M62	T63	W64	F65	S66	M67	T68	W69	F70	S71	M72	T73	W74	F75	S76	M77	T78	W79	F80	S81	M82	T83	W84	F85	S86	M87	T88	W89	F90	S91	M92	T93	W94	F95	S96	M97	T98	W99	F100	S101	M102	T103	W104	F105	S106	M107	T108	W109	F110	S111	M112	T113	W114	F115	S116	M117	T118	W119	F120	S121	M122	T123	W124	F125	S126	M127	T128	W129	F130	S131	M132	T133	W134	F135	S136	M137	T138	W139	F140	S141	M142	T143	W144	F145	S146	M147	T148	W149	F150	S151	M152	T153	W154	F155	S156	M157	T158	W159	F160	S161	M162	T163	W164	F165	S166	M167	T168		W169	F170	S171	M172	T173	W174	F175	S176	M177	T178	W179	F180	S181	M182	T183	W184	F185	S186	M187	T188	W189	F190	S191	M192	T193	W194	F195	S196	M197	T198	W199	F200	S201	M202	T203	W204	F205	S206	M207	T208	W209	F210	S211	M212	T213	W214	F215	S216	M217	T218	W219	F220	S221	M222	T223	W224	F225	S226	M227	T228	W229	F230	S231	M232	T233	W234	F235	S236	M237	T238	W239	F240	S241	M242	T243	W244	F245	S246	M247	T248	W249	F250	S251	M252	T253	W254	F255	S256	M257	T258	W259	F260	S261	M262	T263	W264	F265	S266	M267	T268	W269	F270	S271	M272	T273	W274	F275	S276	M277	T278	W279	F280	S281	M282	T283	W284	F285	S286	M287	T288	W289	F290	S291	M292	T293	W294	F295	S296	M297	T298	W299	F300	S301	M302	T303	W304	F305	S306	M307	T308	W309	F310	S311	M312	T313	W314	F315	S316	M317	T318	W319	F320	S321	M322	T323	W324	F325	S326	M327	T328	W329	F330	S331	M332	T333	W334	F335	S336	M337	T338	W339	F340	S341	M342	T343	W344	F345	S346	M347	T348	W349	F350	S351	M352	T353	W354	F355	S356	M357	T358	W359	F360	S361	M362	T363	W364	F365	S366	M367	T368	W369	F370	S371	M372	T373	W374	F375	S376	M377	T378	W379	F380	S381	M382	T383	W384	F385	S386	M387	T388	W389	F390	S391	M392	T393	W394	F395	S396	M397	T398	W399	F400	S401	M402	T403	W404	F405	S406	M407	T408	W409	F410	S411	M412	T413	W414	F415	S416	M417	T418	W419	F420	S421	M422	T423	W424	F425	S426	M427	T428	W429	F430	S431	M432	T433	W434	F435	S436	M437	T438	W439	F440	S441	M442	T443	W444	F445	S446	M447	T448	W449	F450	S451	M452	T453	W454	F455	S456	M457	T458	W459	F460	S461	M462	T463	W464	F465	S466	M467	T468	W469	F470	S471	M472	T473	W474	F475	S476	M477	T478	W479	F480	S481	M482	T483	W484	F485	S486	M487	T488	W489	F490	S491	M492	T493	W494	F495	S496	M497	T498	W499	F500																																																																									
Total	401	305	254	195	312	977	2009	2678	2712	2674	2900	3024	2969	3296	3872	4483	5263	3844	2139	1790	1455	1322	965	649																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

Latitude: 0' 0.000 Undefined

[illegible]

Site Code: 16
 Station ID: 11946
 Elizabeth A b/w Alpine ST&Clinton ST(SB)

Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T14	*	*	*	*	*	*	*	*	*	*	338	432	480	584	581	830	1230	1363	965	572	469	500	318	239	8901
F15	129	90	50	55	65	103	207	442	597	450	480	536	531	648	674	863	1019	922	689	555	452	420	367	292	10636
S16	192	131	173	125	64	65	92	160	239	320	343	432	470	457	500	442	413	348	369	332	251	319	211	180	6628
S17	210	147	197	145	87	84	122	186	263	346	361	460	482	362	508	374	257	263	350	296	259	303	193	125	6380
M18	96	61	73	81	81	133	233	458	624	482	502	554	466	517	499	539	766	880	630	442	216	175	78	51	8637
T19	76	55	62	73	97	125	225	473	621	480	512	554	553	495	426	510	700	610	406	310	310	288	138	76	8175
W20	59	68	99	111	103	155	255	484	640	500	528	578	562	519	566	718	905	1170	666	460	418	258	155	91	10068
F21	85	84	117	121	115	177	281	500	658	526	552	604	502	445	465	442	755	677	*	*	*	*	*	*	7106
F22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	847	636	771	711	612	842	1415	2703	3642	3104	3616	4150	4046	4027	4219	4718	6045	6233	4075	2967	2375	2263	1460	1054	

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	
Totals	6380	8637	8175	10068	16007	10636	6628	66531
# Days	1	1	1	1	2	1	1	8316
Average	6380	8637	8175	10068	8004	10636	6628	53523
								8921

Total for Month	66531
ADT for 8 days	8316
Total Weekdays	53523
Average Weekdays	8921

Site Code: 17
Station ID: 10640
Irvine Turner Bl b/w Avon Ave&18th A (NB)
Latitude: 0' 0.000 Undefined

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 18
Station ID: 12136
Bergen ST b/w Avon Ave&18th A (NB)
Latitude: 0' 0.000 Undefined

[illegible]

TechniQuest Corporation

4105 US Route 1, Suite # 14
Monmouth Junction, NJ 08852
732.274.9500, Fax 732.274.9510

Site Code: 18
Station ID: 12136
Bergen ST b/w Avon Ave & 18th A (SB)
Latitude: 0' 0.000 Undefined

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	
F01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S02	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S03	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M04	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W06	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T07	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F08	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
S10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
M11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
W13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
T14	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
F15	208	99	65	56	64	87	217	532	702	500	573	574	576	624	634	894	907	782	688	540	574	585	483	266	8107	
S16	236	171	158	103	72	77	98	185	292	341	433	532	578	614	637	637	590	651	624	712	613	556	466	337	10775	
S17	200	146	134	87	62	66	83	157	248	290	368	452	492	521	542	541	502	437	368	392	332	318	250	180	7168	
M18	142	89	71	57	48	55	121	279	419	526	589	525	653	598	600	770	718	615	490	469	435	385	300	204	9158	
T19	154	81	56	32	44	90	199	331	405	452	472	540	582	558	616	621	621	625	563	500	428	360	271	197	8798	
W20	107	68	43	35	48	75	161	282	317	334	333	399	502	447	478	468	514	597	509	452	474	394	358	246	7641	
T21	147	97	56	30	28	73	141	235	296	350	370	459	460	541	526	568									4377	
F22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
M25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
W27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
F29	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
S30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1194	751	583	400	366	523	1020	2001	2679	2793	3138	3976	4468	4479	4618	5239	4544	4220	3654	3525	3246	2973	2422	1641		

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total for Month	ADT for 8 days	Total Weekdays	Average Weekdays
Totals	7168	9158	8798	7641	12484	10775	8429	64453	8057	48856	8143
# Days	1	1	1	1	2	1	1				
Average	7168	9158	8798	7641	6242	10775	8429				

Appendix:
NJ Transit - Greater Newark Bus
System Study Summary

B

NJ Transit - Greater Newark Bus System Study Summary

Over a three year period between the Spring of 2007 and the Spring of 2010, NJ TRANSIT conducted a comprehensive review of the bus network in the greater Newark, Essex, Union and Western Hudson County areas. An overall review of the bus system had not been conducted since the early 1980s, shortly after the inception of NJ TRANSIT. With the share of transit trips as a percentage of journey-to-work trips in the Greater Newark Area down by half since 1970, and NJ TRANSIT recognized it needed to review the system and make some adjustments to grow the transit market. During the course of the study and since it has been completed, several early action recommendations have been implemented.

The four early action recommendations which were implemented during the study are identified below:

1. Expansion of Route 62 service to address overcrowding
2. Implementation of early phases of BRT - gobus 25 on Springfield Avenue and gobus 28 on Bloomfield Avenue
3. Rationalization of Route 39 – Creation of new Route 30
4. Implementation of the weekday evening peak Raymond Boulevard bus lane

NJ TRANSIT's recently announced Bus Service Optimization plan includes the elimination of several routes which have been identified as poor performers. This plan, recently unveiled by NJ TRANSIT, would allow the resources from the eliminated routes to keep fares stable and be reinvested into additional service within Newark and at Newark Liberty International Airport. The reinvestment of Bus Service Optimization savings will enhance the customer experience for those traveling this critical transportation corridor.

The Executive Summary of the NJ TRANSIT Greater Newark Bus System Study follows.

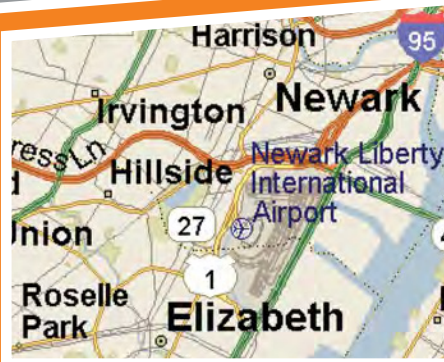
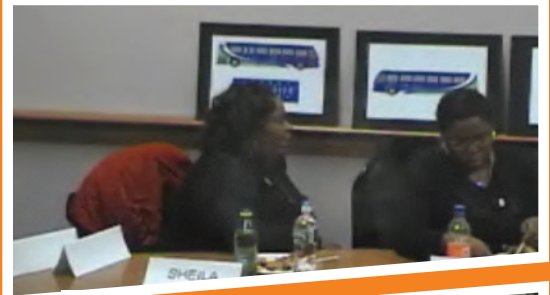
NJ TRANSIT



GREATER NEWARK BUS SYSTEM STUDY

Executive Summary

July 2011



Gannett Fleming
Abrams-Cherwony Group

in association with



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INTRODUCTION

The local bus transit network in the greater Newark-Elizabeth area consists of approximately 50 bus routes operated by NJ TRANSIT and COACH USA. These routes provide approximately 5,200 one-way bus trips each weekday through 6,300 revenue hours of service and requiring 475 vehicles during the peak service period. On any given weekday, these routes transport approximately 240,000 passengers. Taken alone, this network of bus routes would be the 20th largest bus system in the country based on the number of peak vehicles in operation for the motorbus mode, as reported to the National Transit Database (NTD) for Report Year 2008. Among the NJ TRANSIT bus services, NJ TRANSIT's local bus routes in the Newark-Elizabeth area account for approximately 25% of weekday bus revenue hours but carry more than 35% of the total average weekday passengers.

Taken alone, the local bus route network that operates in the Newark-Elizabeth area would be the 20th largest bus system in the country.

Given these facts, this system of bus routes is the cornerstone of NJ TRANSIT's intrastate bus market, representing an important element of New Jersey's public transportation network. This network of bus routes has not been analyzed in a comprehensive manner since the early 1980's, shortly after the inception of NJ TRANSIT. However, since 1970, the share of transit trips as a percentage of journey-to-work trips in this portion of the state has declined by half. In the interim, the geographic area served has undergone significant change in terms of demographics and development patterns. Most notably, residential development has greatly increased the population in the suburban areas north and west of the older urban cores, which, historically have not received a high level of local bus service. In addition, more employment has shifted away from the traditional urban centers to suburban areas and changes in the medical industry have dramatically shifted the location of available medical services more towards suburban locales. Newark Liberty International Airport and the Ports of Newark & Elizabeth have emerged in recent years as significant regional employers. "Big Box" retailers have been drawn to the area in locations such as in nearby Harrison in Hudson County and along the US Route 22 Corridor in Union & Springfield Townships.

In recognition of the numerous factors listed above, NJ TRANSIT decided to undertake a comprehensive review of the bus network in the greater Newark, Essex, Union and Western Hudson County areas rather than focusing on specific narrow issue such as improving interfaces or truncating services with the Newark light rail extension at the Broad Street Station. Each of the geographic study phases included a service planning effort building upon the data collection results. The study was conducted over a three-year time frame beginning in Spring 2007 and finishing in Spring 2010. Additional funding for the study was provided by NJTPA

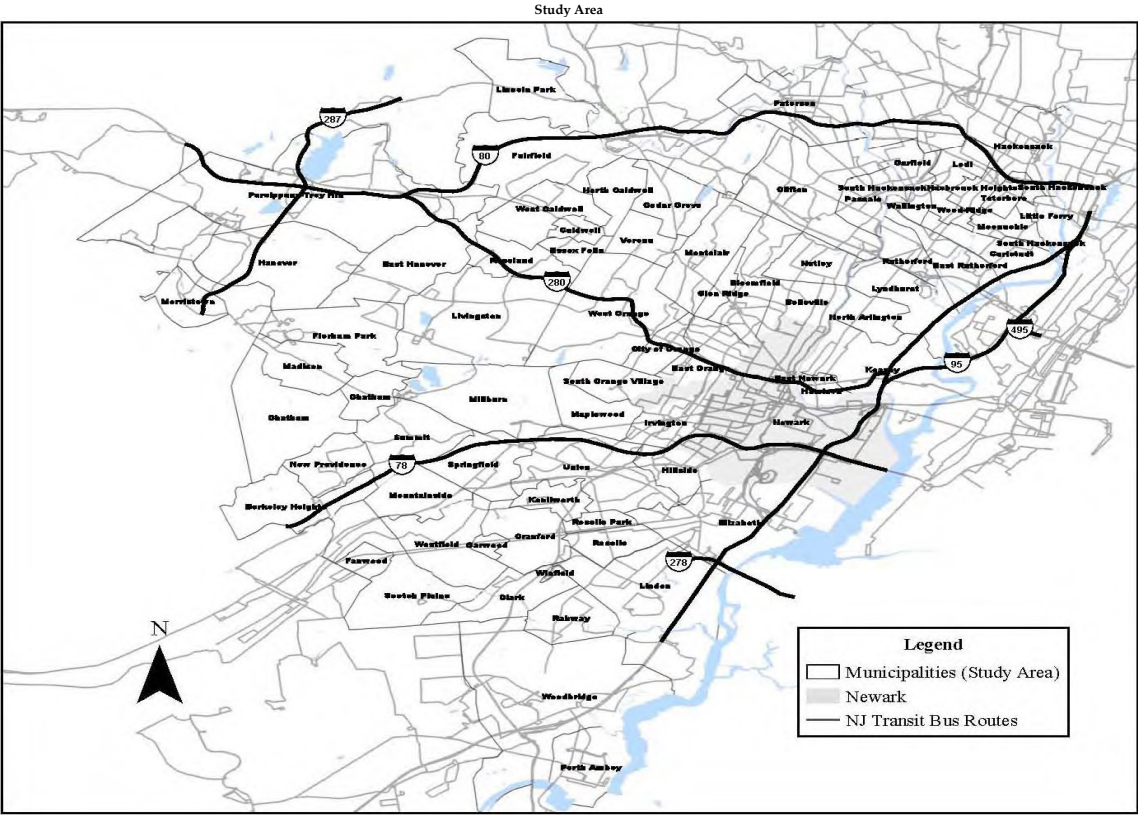
Other national trends have greatly affected mobility needs in the study area. The decline of the manufacturing sector has increased the importance of post-secondary education for the local labor force; especially those seeking basic and advanced job skills and educational degrees received through community and technical colleges. Access to these institutions has become a vital component of economic development efforts throughout the study area.

As these trends changed the nature of the study area, NJ TRANSIT continues to address the emerging transportation needs with a very limited and finite set of resources that must be shared over the entire transit network. As a result, select routes have become complicated with some having numerous operating variations designed to address the unique transit needs of different groups of riders in the most economical way possible.

In 2006, NJ TRANSIT recognized the need to turn the tide of the ridership decline and instead grow the transit market shares in this region because of its importance to the residents and workers in this area and it is essential to the growth of the economy in this area of the state. Coupled with the expansion of the Newark light rail between Newark's Penn Station and Broad Street Station, NJ TRANSIT began to conceptualize how the Newark area bus routes should be restructured to take advantage of the newly created intermodal opportunities both within the City of Newark and the surrounding areas. Ultimately, the targeted goal should be to grow total transit usage by three to five percent annually, beginning in FY2012, with bus transit assuming a sizable portion of this burden. Obviously, for this goal to be achieved, the economy of the region will need to recover from the economic recession.

The Greater Newark Bus System Study (GNBSS) came to include more than 50 area bus routes as listed in Table 1 of the Appendix. The study was initially organized into four phases of analysis of NJ TRANSIT routes based upon geography and function. A subsequent phase that examined the COACH USA route structure was added at the study inception. Each study phase included an extensive on-board ride check and passenger origin-destination and opinion survey effort. An additional phase which included the surveying of the Newark light rail passengers was later included in the study effort. The study area is shown in the figure on the following page.

This document provides a summary of the study process, overall goals of the service improvement proposals and identifies priority recommendations from among the extensive list of proposed changes. The proposals create a much needed foundation for action and further planning, and should be viewed as a blueprint for action in the immediate and longer range future. Additional analysis is necessary concerning future financial and capital needs and opportunities that cover a longer time period, which will fall to the responsibility of NJ TRANSIT staff as it proceeds with implementation.



PLANNING INPUTS

The GNBSS process included extensive data collection along with community, rider and stakeholder input. This supported various quantitative and qualitative analyses. Each analysis played a part in identifying potential service improvements and prioritizing those improvements. Planning inputs included:

- **Socioeconomic and Demographic Analysis** – The study area consisting of Essex, Union and Western Hudson Counties was analyzed to determine where the greatest needs for transit exists based on the size and density of a series of population indicators, including overall population, senior citizen population, low income households, zero-car households, youth population and the number of persons with disabilities.
- **Inventory of Major Trip Generators** – An inventory of destinations which typically attract transit trips was assembled for the study area. This included a list of locations such as major employers, colleges/universities, hospitals, large retail-commercial-industrial centers and government centers.
- **Rider Origin-Destination and Opinion Survey** – As noted earlier, each phase of the GNBSS included a rider origin-destination and opinion survey effort. The survey collected information concerning the riding and travel patterns of current riders along with their opinion of current services and their most important improvement suggestions. Throughout the study, over 20,000 surveys were returned and processed representing an overall 5.7% return rate.
- **On-Board Ride Checks** – While conducting the origin-destination and opinion survey, survey workers also performed on-board passenger activity and time checks in which the passenger activity (i.e., boards and alights) were recorded at each bus stop along the bus routes. In addition, the arrival time of the bus at key stops was noted. This allowed for the identification of poorly performing route segments, instances of overcrowding as well as routes experiencing on-time performance problems.
- **Route Diagnostics Analysis** – A detailed quantitative analysis was performed for the routes included in the study to determine which routes are placing a disproportionate financial or resource burden on the system overall given current ridership performance. Conversely, the analysis allowed for the identification of routes which perform better than would be expected given the current resource investment.
- **Focus Groups** – NJ TRANSIT conducted a series of focus groups with members of the public at the outset of the study process. The groups included a mix of bus riders and non-bus riders. The sessions focused on the participants' opinions of the current bus services and their suggestions for improvement.

The study included a rider origin-destination and opinion survey. Over 20,000 survey cards were processed throughout the study.

- **Community Outreach** – The study process also included group sessions with individuals and stakeholders along with municipal and county officials from throughout the study area who have a stake in the design and delivery of bus service in the Newark-Elizabeth study area. This group included a mix of representatives from both the

Outreach efforts included meetings with municipal and county officials to identify development and redevelopment priorities.

Participating in the local community's priority projects presents opportunities for partnering with public and private sector entities.

public and private sectors. Similar to the focus groups, the sessions provided information on the participants' opinions of current services and improvement suggestions. In addition to these groups, the study included specific outreach meetings with the planning and development communities throughout the study area. These meetings focused

on identifying the broad development or redevelopment plans of the communities in the study area and how the local bus system could support those plans.

- **Bus Operator Outreach Meetings** – A series of meetings were held with the bus operators at each of the garages from which the routes included in the study operate. This included both NJ TRANSIT and COACH USA facilities. Operators were asked for their input regarding issues with the current services and their suggestions on how service could be improved.

OVERALL PLANNING GOALS

Taken together, the various qualitative and quantitative planning inputs described above helped determine the broad goals that should be addressed as part of the service improvement planning process. For the GNBSS study area, these goals include:

- **Improve Access to CBD/Non CBD Employment, Education and Medical Services** – This, in essence, is the definition of mobility. Improved access to these vital locations not only improves the quality of life of area residents but also promotes economic development efforts in both the urban core and outlying areas. Journey-to-work trips have to be the first focus, but that is not where the effort must end.
- **Simplify the Route Structure** – As noted earlier, attempting to address divergent mobility needs with finite resources over a period of three decades has resulted in some bus routes with numerous operating variations. Therefore, every attempt was made to revise the existing route structure and develop a new user-friendly route structure with limited routing variations to work, shop, medical, personal business and myriad other daily travel needs.
- **Rationalize Existing Service** – The detailed ride check and running time data

collected through the study effort allows for the identification of poorly performing routes and route segments. These route segments were further examined for potential elimination or service reduction allowing the resources saved to be redirected to route segments on which overcrowding was identified. In addition, the running time data allows for the re-timing of current routes which can greatly improve the on-time performance of the route thereby enhancing the quality of service from the rider's perspective. The primary finding is that the core bus network is on streets and corridors where it should be; however, opportunities for improvement continue to exist.

- **Improve Existing and Create New Multimodal Connection Opportunities** – Given the breadth of the transit system in the study area, service planning efforts must view these bus routes as one element of a complete multimodal public transit network. That is, plans to address particular travel patterns should, to the greatest extent possible, incorporate all modes available for all or part of the trip. Coupled with fare policy changes across multiple modes and carriers, this will allow for a more efficient use of current resources and reduces duplication of services. Further exploration of developing a joint fare structure between the various transit options and operators will encourage a greater level of transferring between modes.
- **Develop a BRT System for Newark & Surrounds** – Starting with some of the largest passenger volume bus corridors in the existing system, develop an incremental plan for the implementation of Bus Rapid Transit (BRT) that uses elements such as special bus priority treatments on local streets and at intersections coupled with other supportive actions to create a new overlay rapid bus network that is highly visible, faster, more reliable and higher quality. NJ TRANSIT is clearly on the proper path as this incremental approach has been endorsed in the recently released study of the Mineta Transportation Institute, titled “From Buses to BRT: Case Studies of Incremental BRT Projects in North America.”
- **Support Local Development/Redevelopment Plans** – Transit can play an important role in the success of development and redevelopment plans of the communities in the study area such as in Newark, Elizabeth and the Meadowlands. The goals of these communities were considered when developing service improvement proposals in the affected areas. In addition, participating in these identified development and redevelopment priorities earlier rather than later presents opportunities for partnering with local communities or private sector entities to improve or add new access via public transit.
- **Engage Local Partners** – Work with local transportation partners such as NJDOT, counties and municipal governments to make improvements in the transportation infrastructure to insure that the NJ TRANSIT and private bus networks can travel at the posted speed limit 24 hours a day, 7 days a week.

SERVICE PLAN SUMMARY

As noted earlier, taken alone, the local bus route network in the greater Newark-Elizabeth area would be the 20th largest bus system in the country. The more than 50 bus routes included in the study serve varying purposes and geographical areas. For that reason, the routes and the resulting service improvement proposals have been organized into the following categories:

- Orange-Newark-Elizabeth (O-N-E) Central Core Services;
- GO Bus (Bus Rapid Transit) Services;
- Crosstown Services;
- Newark Liberty International Airport/Ports Newark & Elizabeth Services;
- Union County Services;
- Suburban Essex, West Hudson & Bergen Counties Services;
- Coach USA Services;
- New York Based Services.

Given the breadth of the study and the extensive number of resulting service recommendations, the priority order of proposals within each of the above categories was identified. Comprehensive descriptions of all proposals generated by the study have been documented in the *Greater Newark Bus System Study Technical Service Plan* and the *Final Report*, which have been submitted under separate cover. For the purposes of this Executive Summary, the early action items and the top ten priority recommendations from among all of the proposals are described below.

PRIORITY RECOMMENDATIONS

A collaborative process involving the consultant team, as well as Bus Service Planning and Capital Planning staffs at NJ TRANSIT was followed to identify the early action recommendations and the top ten priority recommendations from among the dozens of proposals resulting from the GNBSS study process. The early action items and ten priority recommendations were identified in consideration of:

The feasibility of early implementation and opportunities for partnering were considered when identifying priority proposals.

- The degree to which the proposal addressed one or more of the overall planning goals described earlier;
- The feasibility of early implementation; and
- Likely availability of operating and capital funding to implement

The resulting list of four early action items and ten priority recommendations is summarized below. More detailed information for each recommendation is

included in the Technical Service Plan found in the appendix to this report:

Early Action Recommendations Implemented During the Study

1. **Expansion of Route 62 service to address overcrowding** - During the early outreach process to Newark Liberty International Airport employers, it was quickly determined that insufficient capacity existed on Route 62 between downtown Newark and Newark Liberty International Airport to support the present travel needs of the airport workforce during the early afternoons and later evening hours. In late 2006 additional weekday and weekend service was added to the Route 62 schedule to address immediate needs of airport employees.
2. **Implementation of early phases of BRT - GO Bus 25 on Springfield Avenue and GO Bus 28 on Bloomfield Avenue** – Based on the recommendations of a separate analysis which reviewed the potential for initial BRT services within Newark – in late 2008 limited weekday peak hour service with BRT elements (enhanced station stops and unique branding) was implemented along the Springfield Avenue corridor (Go Bus 25) between the Irvington Bus Terminal and Newark Penn Station. In 2009, Go Bus 25 expanded to offer peak hour service both inbound and outbound.

This was followed in the fall of 2009, with a second, more robust GO Bus corridor along the Bloomfield Avenue-Broad Street corridor (GO Bus 28) operating daily between the Bloomfield RR Station and Newark Liberty International Airport via Newark's Innovation Zone and University Heights. This route provides direct 24 hour service to the airport, which employs over 24,000 workers and serves over 90,000 passengers per day. Additional BRT elements included with this corridor were: headway based operations, the use of new uniquely branded buses, the use of Transit Signal Prioritization (TSP) at 14 intersections along Bloomfield Avenue within Newark and the demonstration of real time service information at the Bloomfield Avenue Light Station stop.

Go Bus vehicles and station stops were partially funded by Liberty Corridor and ARRA. These organizations, along with Essex County helped fund the Bloomfield Avenue TSP.

3. **Rationalization of Route 39 – Creation of new Route 30** – An analysis of the busy Irvington-Newark-Harrison-Kearny corridor was undertaken early in the study process with the goal of achieving some early service efficiencies due to declining demand for service along the northerly portion of the route. After a detailed ridership analysis was completed, a recommendation was put forth and implemented in mid 2009 to split the existing Route 39 into two unique

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routes. Today, the Route 39 operates only between Irvington and the Newark CBD, originating and terminating at Newark-Penn Station. The northerly portion of the Route 39 to Harrison and Kearny became the basis of the new route known today as the 30. Route 30 service levels in both the peak and off-peak periods are reduced compared to the original Route 39 and are based upon the demonstrated demand for service in this market. The map for this service is presented on the following page.

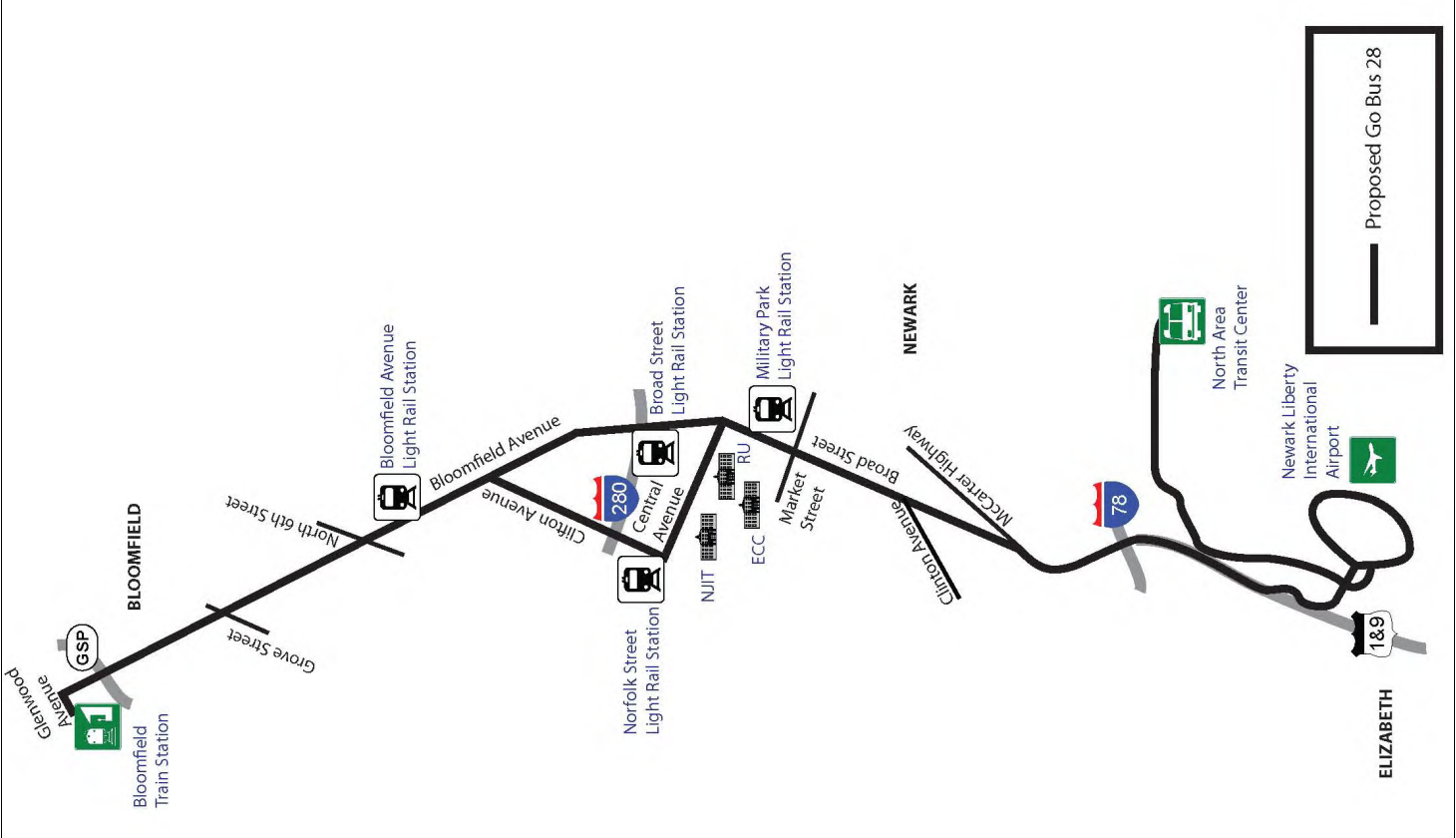
4. **Implementation of the weekday PM peak Raymond Boulevard bus lane –** Based upon the recommendations of a previous analysis for the implementation of a bus only priority lane within the Newark CBD, the weekday PM peak hour Raymond Boulevard bus only lane was implemented in 2008 between Newark-Penn Station and the intersection of Raymond Boulevard and NJ Route 21. This facility allows for buses exiting the Penn Station bus lanes to have both traffic and signal queue jump of a few minutes along the normally congested Raymond Boulevard corridor.

Top Ten Priority Recommendations

1. **Expand GO 28 – Rationalize Route 28 –** The new GO 28 is a Bus Rapid Transit (BRT) type route that was implemented between the Bloomfield Train Station and the *Newark Liberty International Airport's North Area Transit Center via the Central Terminals Area* as part of the Liberty Corridor improvements in the Fall of 2009. GO 28 operates on two variations with one serving the University Heights/Newark Innovation Zone area of Newark, thereby providing a convenient link between University Heights community and the Airport which can *support the development of the area as a major research center.*

Proposals call for a multi-phased expansion of the GO 28 service to the *Montclair State University and Montclair State University Station* on the northern end and to Jersey Gardens Mall – Newark Liberty International Airport – South Area in Elizabeth on the southern end. As GO 28 is fully implemented, service on Route 28 should only operate between the Wayne Transit Center and the Bloomfield Avenue Newark Light Rail Station, with additional *resources directed to other more effective uses.*

GO Bus 28



2. Route 62 Rationalization – Creation of up to three new Routes 806/807/808 –

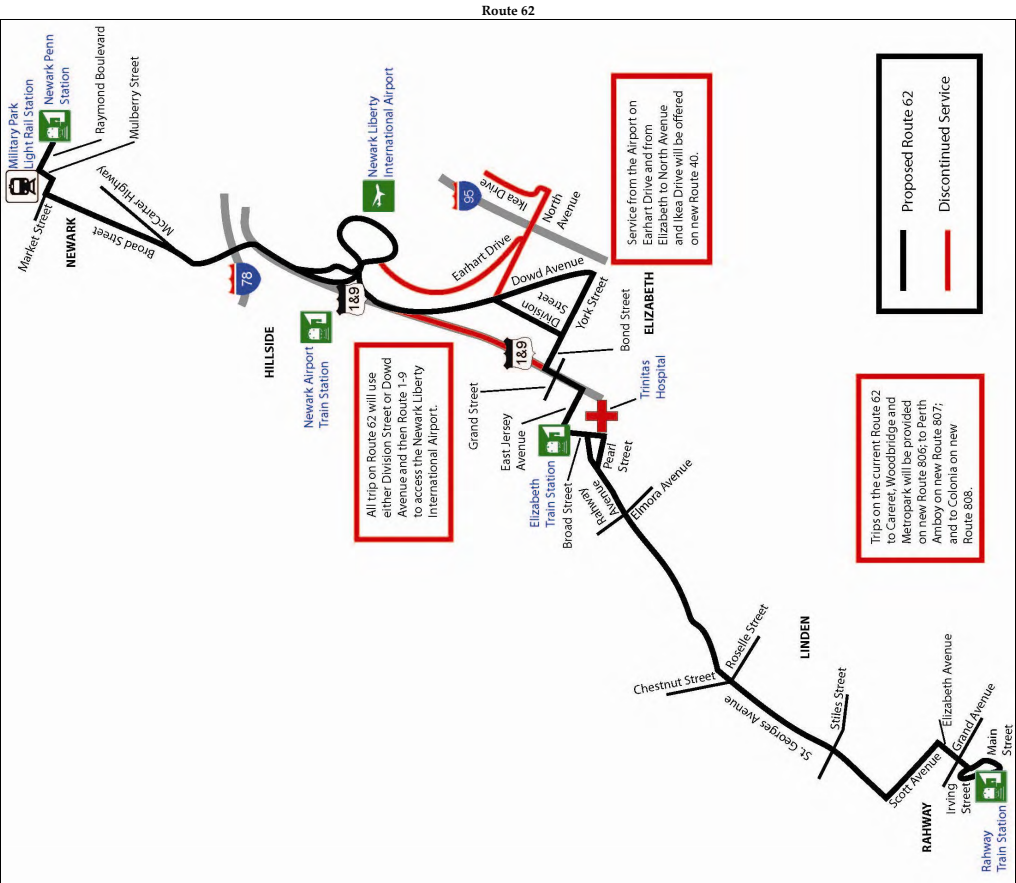
To simplify operation of Route 62 - which currently acts as the long spine route for the key Perth Amboy-Woodbridge-Rahway-Elizabeth-Newark Liberty International Airport-Newark corridor - the service would be re-designed to *offer a simpler, shorter and more frequent service along this corridor between Rahway, the Airport and downtown Newark*. It would be tied to the creation of up to three new connecting feeder bus routes at a potential transit center at the Rahway Station. Successful implementation of a Rahway hub would require a search for, and procurement of a location in proximity to the Rahway Station capable of supporting the spine and feeder routes. The recommendation not only simplifies current service, but also presents an opportunity for NJ TRANSIT to *make greater use of private service contractors* to operate the newly designed system of feeder routes, when additional funding becomes available.

3. Union County Busway *(a component of the Union County Sustainability Corridor)*

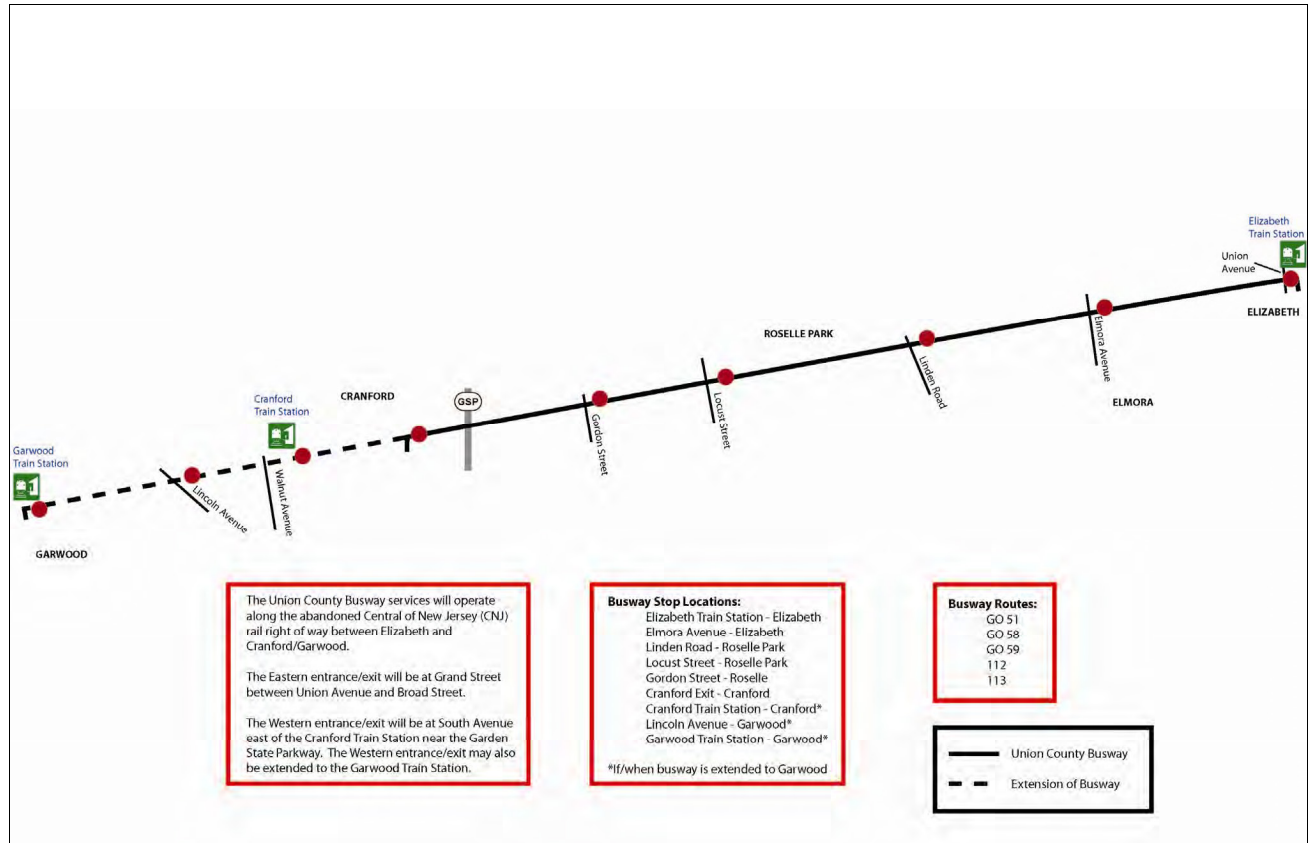
– A central piece of the GNBSS's vision for bus services in Union County is the creation of a new Busway emanating from a new intermodal transit center at the Elizabeth Station and following the abandoned right-of-way of the Central of New Jersey Railroad to Cranford. The potential also exists to extend the Busway operation via the local street network eastward from the Elizabeth Station area to the Newark Liberty International Airport via Elizabethport and Jersey Gardens and from Cranford Station westward to Garwood Station. Extensions westward to Garwood and possibly further westward to Plainfield *would support proposed redevelopment plans* for the station area, and foster development on the entire corridor by *presenting public-private partnership development opportunities*.

A phased implementation of the busway service is planned with the eventual implementation of a network of local cross-county services that provide express service options to destinations such as the *Union County College - Cranford Campus, the Newark Liberty International Airport (Central Terminal Area, North/South Areas) and to Jersey Gardens Mall*. It is also envisioned that a few New York based commuter services such as Routes 112 or 113 from southwestern Union County could utilize the Busway if travel time can be reduced.

This BRT corridor is undergoing further analysis by NJT in the *Union County Sustainable Transit Corridor Site Planning and Transit Analysis* effort.

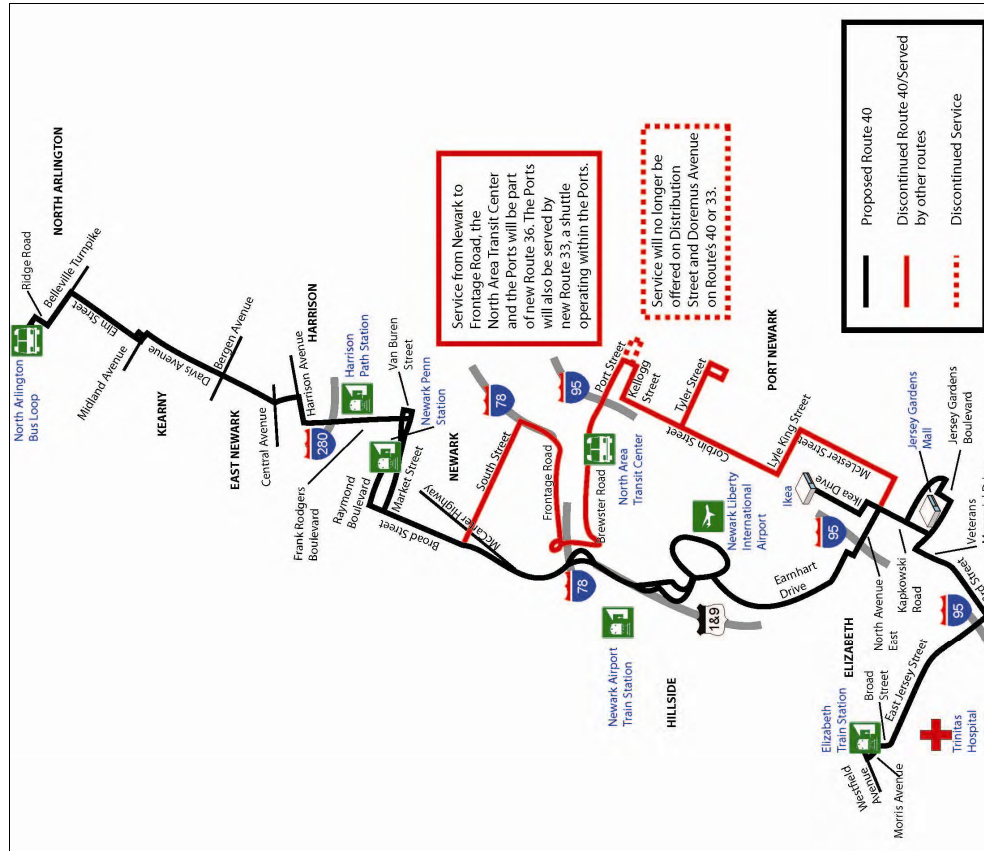


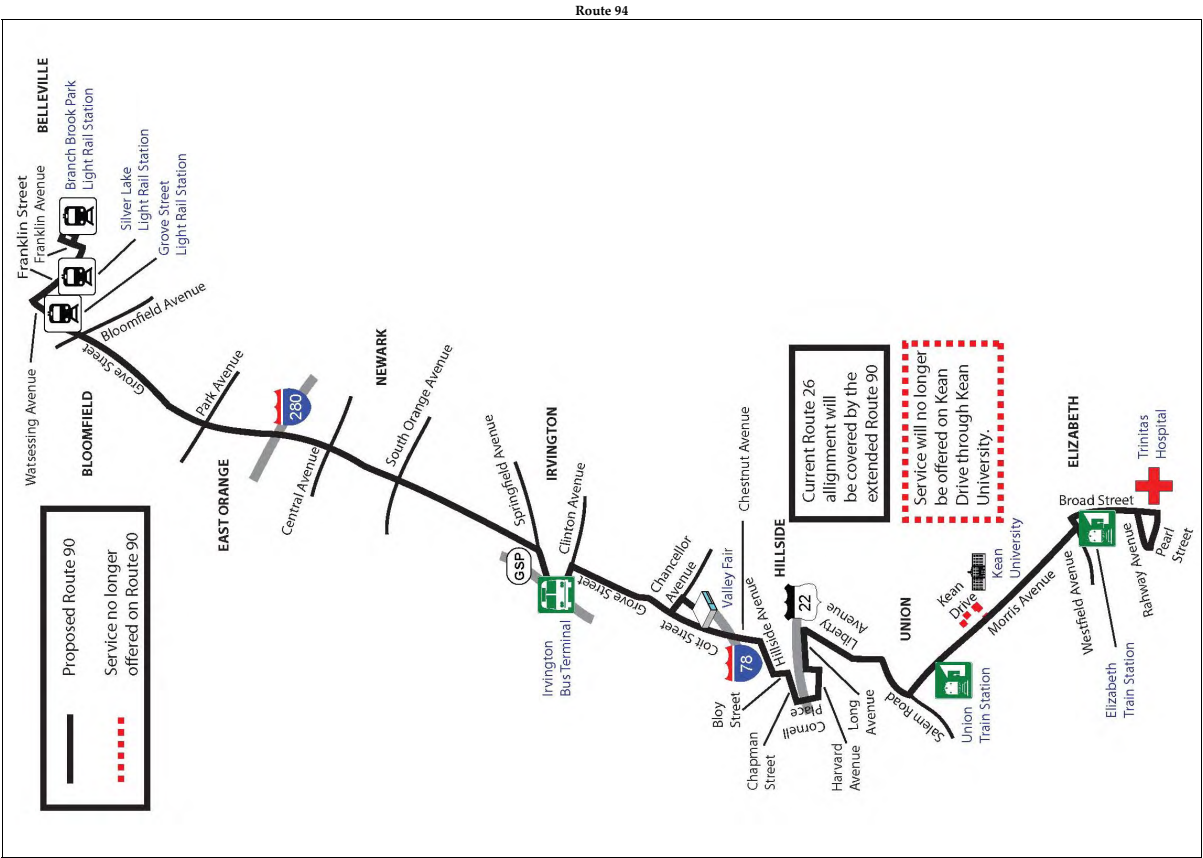
Union County Busway



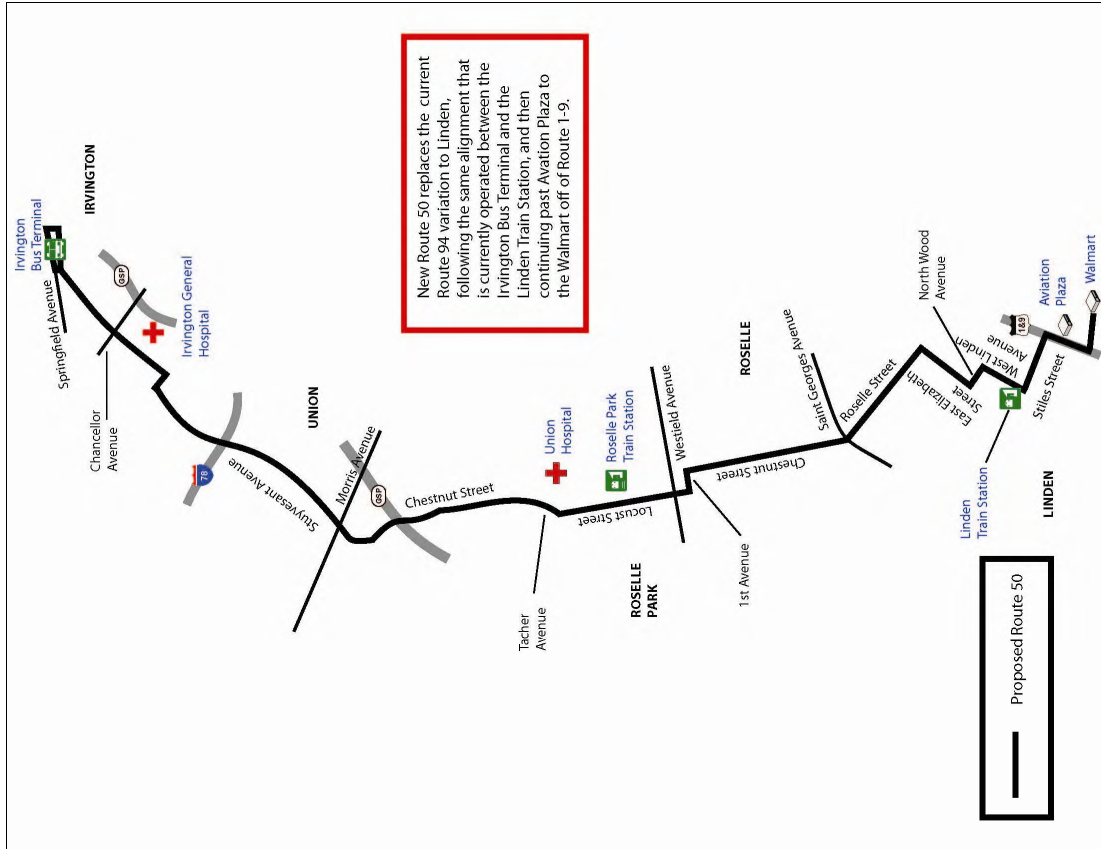
4. **Route 40 Restructuring – Creation of new Routes 18 & 33** – This group of new or redesigned current routes *would improve access to the airport* from the North Arlington-Kearny-Harrison corridor and from the Ironbound section of Newark. In addition, this package of routes would improve access to the Airport from Southern Hudson County (Bayonne/Jersey City) through the creation of a new Route 18. Additionally, this group of proposals would introduce a new Route 33 Port Shuttle, which will allow for more flexible service in the ports area with small vehicles providing closer and more flexible access to port employers. The introduction of the Route 33 Ports Shuttle also *presents an opportunity for partnerships with the Port Authority of New York and New Jersey (PANYNJ)*.
5. **Elimination of Routes 42/93/96/97** – These routes have all been identified as poor performers and have been recommended for elimination. Eliminating these routes will allow these *resources to be reinvested in the existing system to address running time and other operational performance issues*.
6. **Route 94 Restructuring – Creation of new Route 50** – This proposal would improve *access to employment and shopping opportunities* along the US 22 commercial/retail corridor in Union County from the western suburbs of Newark, East Orange, Irvington and Union Center by providing more consistent and frequent service along the present Route 94 - US 22 branch of the route. *The route would also be simplified* by creating the new Route 50 which would replace the current Route 94 service between the Irvington Bus Terminal and Linden.
7. **Expansion of Route 99** – Route 99, the Clifton Avenue Crosstown in the City of Newark, would be extended on both its northern and southern ends. On the northern segment, the route would extend to the Branch Brook Park Station on the Newark light rail to *create intermodal connection opportunities* on the route. Subsequently, Route 99 could be extended south to the Union Train Station on the Raritan Valley Line and Kean University to *create intermodal connections* and *improve access to an institution of higher education*.

Route 40





Route 50



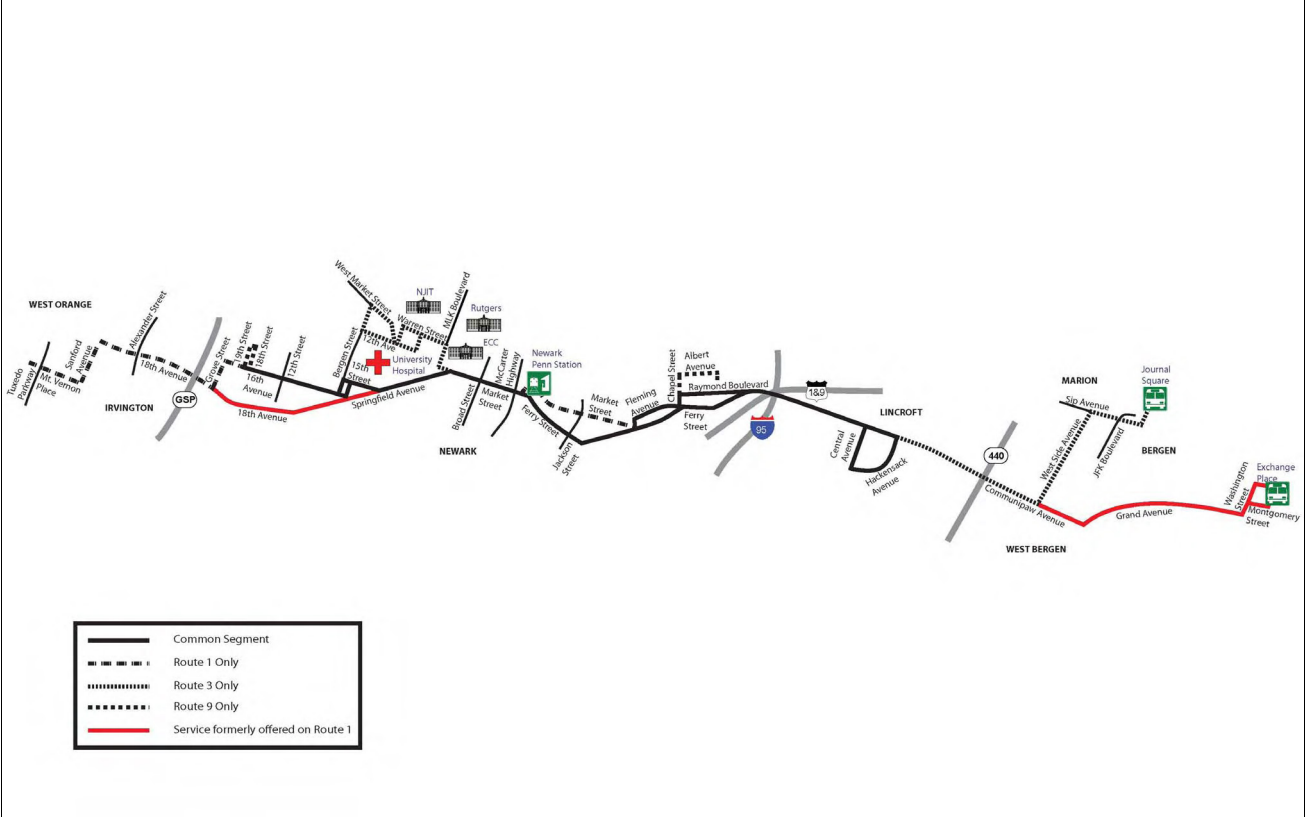


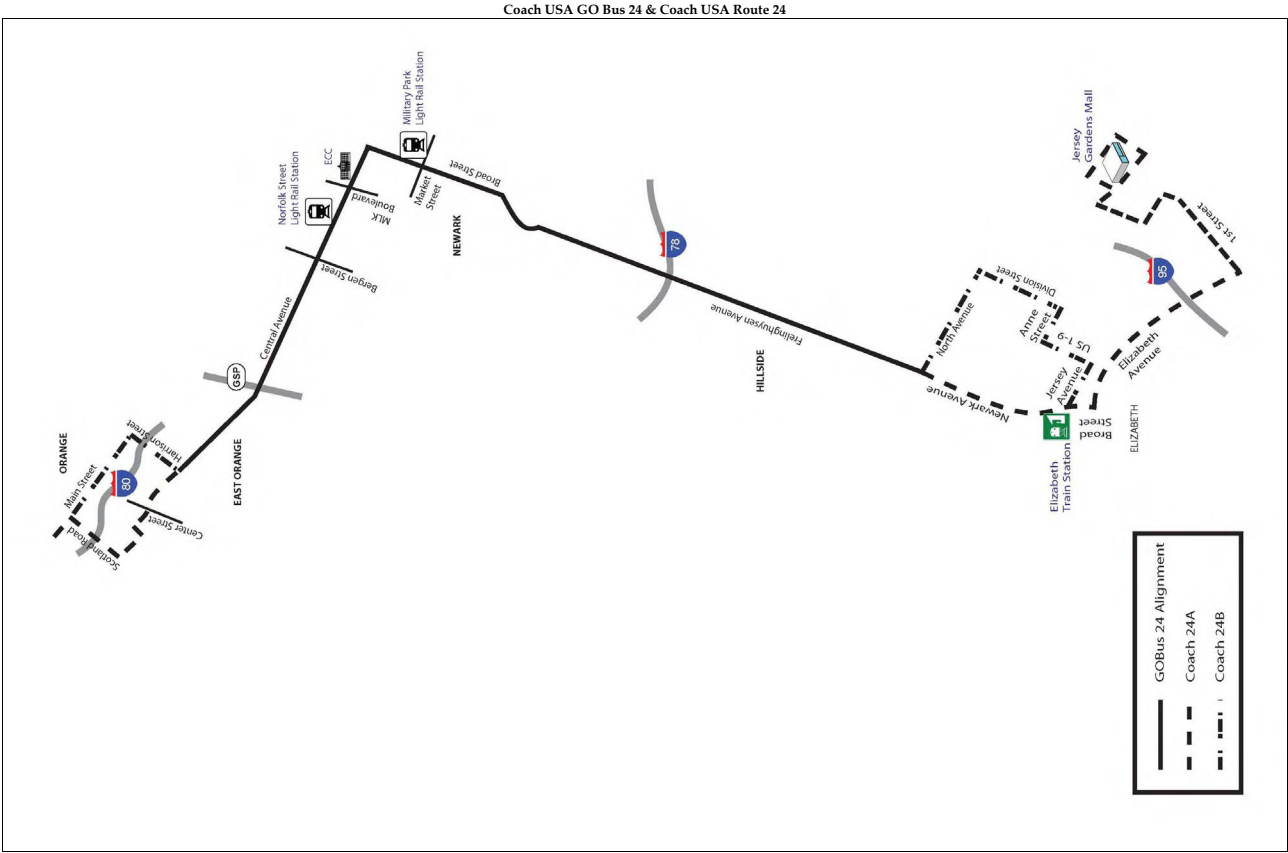
8. **Restructure Route 1 – creation of new Routes GO1, 3 & 9** – Route 1 is currently one of the most important, but most complex bus routes in the Newark-Elizabeth area. In addition, Route 1 *is subject to occasional delays* since the current alignment traverses two lift bridges between Newark and Kearny. This package of service improvement proposals would create up to three new separate routes that would not only *simplify the service and improve reliability*, but would also *improve connections to the University Heights area of Newark* from Penn Station, the Journal Square Transportation Center and portions of western Hudson County. Future phases of the Route 1 restructuring include the possible introduction of a new GO 1 BRT style route between Penn Station and Ivy Hill. The recently completed Jersey City Bus Study also offered alternate designs of Route 1 service. These two differing recommendations need to be reconciled for efficiency and effectiveness.

9. **Restructure COACH USA Route 24 – creation of new GO24 BRT – COACH** USA's Route 24 would maintain its current route structure, but will include some minor service revisions in the Elizabethport area – however service will still be offered to the area – and the introduction of a new GO 24 BRT variation along the major Central Avenue and Frelinghuysen Avenue Corridors in Newark. This Go Bus route would be operated by COACH USA, and the service *will support the City of Newark's redevelopment vision* for these key corridors.

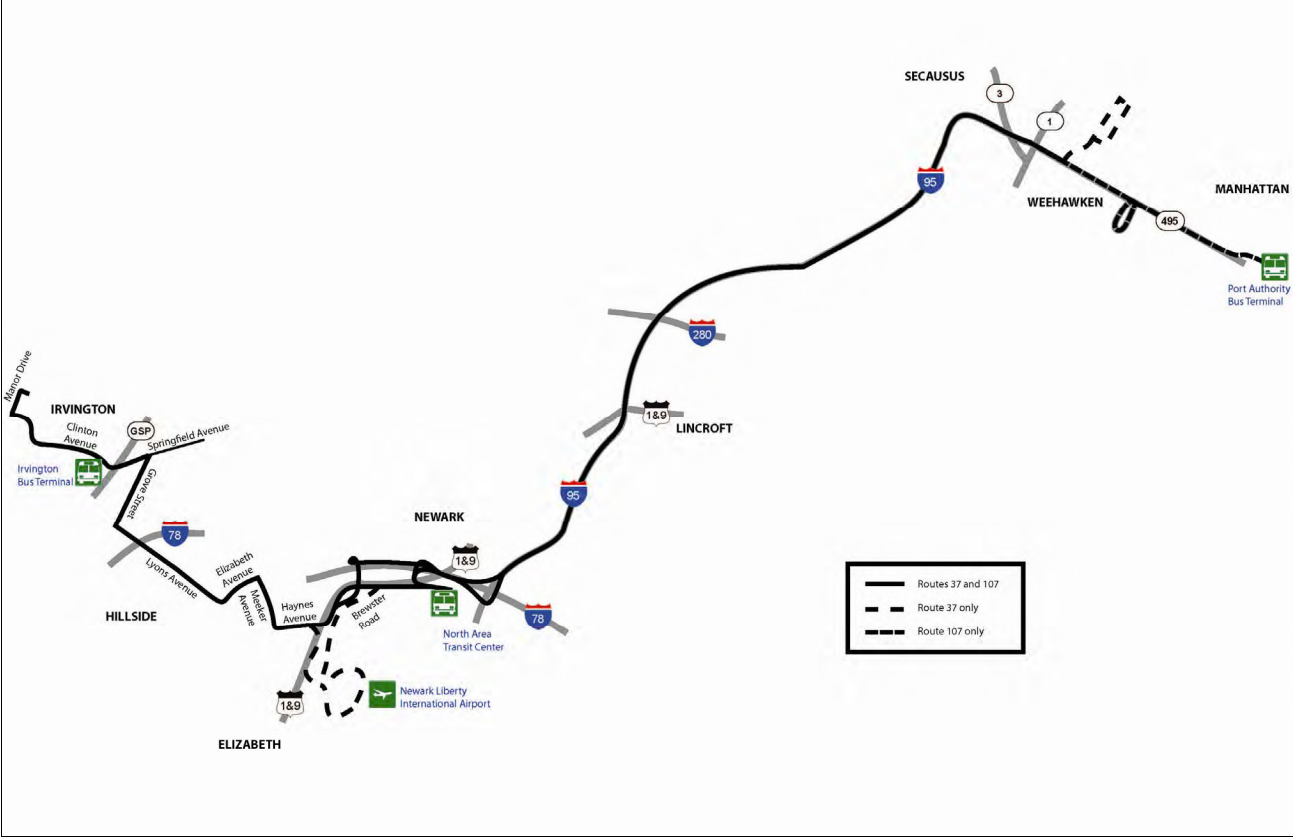
10. **Restructuring of Routes 37 & 107** – These two routes would be redesigned in a way that better reflects the purpose of the two routes. Route 37 would continue to operate as a core local route between Newark- Ivy Hill – Irvington – Newark Liberty International Airport. With a new extension of service from the Airport to the Hudson-Bergen light rail station on Bergenline Avenue in Union City in central Hudson County, for first the time northern and central Hudson County residents would have a direct and frequent one seat ride to the Newark Liberty International Airport, replacing a multi-trip, multi-mode journey. Job access and leisure travel options would be significantly *improved for Hudson County residents*. Route 107 would be redesigned to become more of a commuter oriented service with both local and express service options. These improvements would *support redevelopment efforts planned for Irvington Center and present an opportunity for a public-private development opportunity* if a planned commercial development and parking garage adjacent to the Irvington Bus Terminal moves forward.

Routes 1, 3 & 9





Routes 37 & 107



The above paragraphs highlighted the initial four early actions items and the ten priority service improvement recommendations resulting from the GNBSS. As noted, each of these proposals plays a role in improving access to major employers, institutions of higher learning and medical facilities; creating intermodal connection opportunities; or improving or rationalizing current operations. It should be recognized that the service improvement plan includes numerous other changes to the network of bus routes serving the study area.

The proposal profiles included in the appendix provide information regarding the resource impact of the priority recommendations described above. It is envisioned that other proposals developed as part of the planning process will be implemented as resources are available or as demand warrants.

CAPITAL NEEDS AND SUPPORTING POLICIES

It is important to recognize that several other components are involved in the feasibility and success of any service improvement plan. This section provides an overview of the capital needs and supporting policies which would be needed to support the implementation of proposals recommended in the GNBSS.

Capital Needs

- Revenue Vehicles** – The implementation of the proposals included in the GNBSS would require a significant increase in the number of vehicles needed to operate scheduled services and additional maintenance facilities to manage the expanded fleet. NJ TRANSIT will not only need to ensure a sufficient fleet size, but will also need to examine the most appropriate vehicle fleet mix. With the expansion of services in the suburban areas, the incorporation of additional smaller transit buses (i.e., 30' length) should be investigated (if passenger loads permit), given that these vehicles tend to be more acceptable to suburban communities. In addition, vehicle design, such as low-floor configurations, can assist in operating efficiency by helping to speed the boarding process.
- Maintenance Facilities** – Related to the revenue fleet is the issue of bus maintenance and support facilities. Three out of the four NJ TRANSIT bus maintenance facilities that presently support service in the greater Newark-Elizabeth area are currently at or near capacity. An increase in the fleet size would require expansion of current maintenance facilities and/or the possible addition of new maintenance facilities to address capacity issues. Based upon the service recommendations prepared for this study, it is anticipated one additional maintenance facility could be required.

NJ TRANSIT will need to ensure a sufficiently sized fleet, an appropriate fleet mix and adequate maintenance and possibly additional facilities for the implementation of GNBSS.

- **BRT Features** – As NJ TRANSIT continues to incrementally implement its Bus Rapid Transit (BRT) program, GO BUS, it will be necessary to procure and install various technologies and passenger amenities along designated routes. These include distinctive shelters, security lighting, posted and electronic service information, off-board ticketing options, transit signal priority, etc. Bus transit improvements, specifically those associated with creating and sustaining BRT services can truly become an enabler of economic development, as has been proven in other parts of the United States.
- **Transit Centers** – The GNBSS envisions increased focus on certain existing transit centers as well as the need for new major hub locations and local neighborhood locations. New or expanded major transit hubs are envisioned initially for these key locations: Newark – Orange Street Light Rail Station, Elizabeth Station and Rahway Station. Along with actual physical engineering at some of these locations, hubs should also be equipped with various amenities including:
 - Sheltered/protected waiting;
 - Security (lighting, cameras, etc.).
 - Posted information;
 - Technology (real time information, etc.);
 - Fare media purchase options;
 - Way finding signage;
 - Parking (where applicable);
 - Vending/retail presence

Other Supporting Policies and Factors

- **Technology** – There are various technology tools available to the transit industry that can not only improve passengers experience with the transit system, but can also allow NJ TRANSIT to operate more efficiently. NJ TRANSIT should develop an organization wide plan for the use of technology in such areas as bus and facility security, off-board fare collection, public information, operations improvements (such as Traffic Signal Prioritization) and on-board data collection (such as Automated Passenger Counters and Automated Vehicle Locator technology).
- **Public Information** – As noted in the previous point, technology tools can be used to provide the public with information about service. NJ TRANSIT should pursue the most modern methods of reaching its customers. However, it must be considered that transit users continue to rely on traditional printed and posted sources for service information. NJ TRANSIT should strive to continuously balance and improve the presentation, availability and timeliness

NJ TRANSIT should develop an organization wide plan for the use of technology in various aspects of bus service delivery.

of its service information.

- **Fare Policy** – Several of the recommendations included in the GNBSS created more opportunities for NJ TRANSIT and COACH USA riders to transfer between rail, light rail, rapid transit and bus modes. However, NJ TRANSIT's and COACH USA's and other regional transit providers current fare structures do not promote those types of connections. NJ TRANSIT in conjunction with COACH USA and the PANYNJ should continue pursuing an integrated fare structure that allows riders from one system to use the services of another system without paying multiple fares.
- **Liberty Corridor** – An initiative sponsored by Senator Robert Menendez – the Liberty Corridor was an initial source of funds to support development of the GO 28 BRT program. Funds from this initiative could be used to support operational recommendations and capital investments in service focused around the Ports of Newark & Elizabeth, Newark Liberty International Airport and their support zones across Essex and Union Counties.

NJ TRANSIT along with Coach USA and the PANYNJ should continue pursuing an integrated fare structure that allows bus riders to use multiple transit networks without barriers.

OTHER INFLUENCING FACTORS

While a priority implementation order has been identified for the proposals within each of the categories listed above, there are various factors internal and external to NJ TRANSIT that could affect future decisions on which proposals should be implemented and when. Among other issues, these may include:

- **Current and future funding for existing and expanded operations is uncertain** – The current economic recession has essentially curtailed any type of planned service expansions for the Greater Newark area and throughout the state as a whole. In these trying economic times, NJ TRANSIT must be efficient in using the funds made available from the State and paid to it in fares to provide a customer responsive service that offers sufficient value.
- **Employment Rebound at the Airport/Ports and support areas** – As the economy recovers, employment may increase quickly at the Newark Liberty International Airport, at the Ports of Newark & Elizabeth and their respective support areas. This may change the priority status of some of the proposals designed to improve access to the Airport/Ports area from various locations throughout the study area.
- **Potential Curtailment/Abandonment of service by COACH USA** – At any time COACH USA may choose to abandon current services or be in a position where they are unable to continue operating certain services. In the GNBSS study area this could have a major impact on mobility since private carriers cover core critical major corridors such as Central Avenue, Elizabeth-

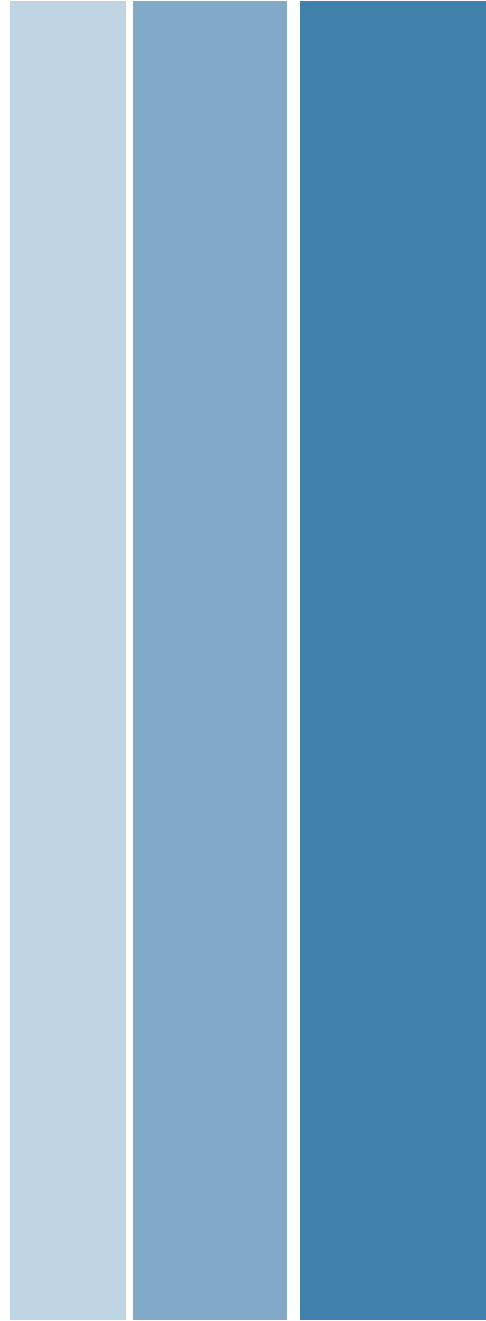
Frelinghuysen Avenues and South Orange Avenue. If the private carrier could no longer serve selected core corridors of the study area, NJ TRANSIT would need to direct resources to maintain service in those corridors.

SUMMARY

This Executive Summary provides an overview of the study process for an extensive network of bus routes that are vital to the economic health of the Greater Newark area. It has included a detailed and comprehensive description of the existing transit system, its users, and the setting in which it operates. In addition to those qualitative inputs, comments were sought from stakeholders and the public. Based on their information, an extensive program of transit improvements have been identified for the near term and longer horizon periods. The study recommendations provide a detailed blueprint of bus system changes that will shape transit decisions.

Appendix: Bicycle Improvement Plan

C



Bicycle Improvement Plan

In numerous communities, bicycling is an important and growing component of a multi-modal transportation system. Improving facilities to support bicycling not only supports the growth of this sustainable mode of transportation, but also results in a variety of ancillary benefits as cycling rates increase. The benefits of bicycling include the following:

- **Improved public health:** As recently as 1994, the maximum percentage of obese persons in any U.S. state was 19%, and the majority of states had rates lower than 15% (U.S. Centers for Disease Control and Prevention). By 2009, nine states had obesity rates exceeding 30% of the population, and all but one state (Colorado) had rates of 20% or higher. If trends continue, in 2030, 86% of adults will be overweight or obese, and the associated health-care costs will be \$860 – \$956 billion per year. Creating a more enticing public environment that encourages active modes of transportation, such as bicycling and walking, can result in a 35 to 161% increase in physical activity and a 25% increase in the number of people exercising at least three times per week (New York City, Active Design Guidelines, 2010).
- **Improved safety for all street users:** In addition to improving cyclists' comfort and safety by providing on-street bicycle facilities, streets modified to accommodate cyclists have been shown to improve safety for all users, not just cyclists. Frequently the installation of bicycle facilities such as bicycle lanes results in narrowed travel lanes for automobiles, and narrower travel lanes have a traffic calming effect, slowing the speed of motorists. In addition, in the presence of cyclists, motorists typically drive slower. Slower traffic means that when crashes occur, vehicles are traveling at a slower speed. The probability of death in a crash decreases exponentially with decreased vehicle speed (E. Pasanen, *Driving Speeds and Pedestrian Safety*, 1992). For instance, a pedestrian hit by a motorist traveling at 40 mph has close to a 100% probability of being killed; at 20 mph, that probably drops to near 10%. Cities with higher rates of cycling have much lower rates of fatal crashes for all road users (Evidence on Why Bike-Friendly Cities are Safer for All Road Users, Environmental Practice, 2011). For instance, Davis, California, with one of the highest rates of cycling in the U.S., at 15%, has a fatal crash rate 1/7th of the U.S. average. (For period 1997 – 2007, the fatal crash rate for Davis was 2.1 fatalities per 100,000 residents; for the U.S. as a whole for the same period the rate averaged

14.8 per 100,000 residents.) In addition, crash rates for bicyclists have been shown to drop as bicycling increases and bicyclists and motorists become more familiar with sharing the road (Portland Bureau of Transportation, New York City Department of Transportation).

- **Reduced congestion:** Generally speaking, the goal of any transportation network is to move people and goods as quickly, conveniently, safely, and efficiently as possible. The movement of those goods and people is the goal, not necessarily how they are moved. Thus, many engineers and planners now focus on total street capacity, rather than automobile capacity, when examining the efficiency of streets or the transportation network they comprise. Given the simple fact that bicycles take up dramatically less space than automobiles, total street capacity or mobility can often be increased simply by reallocating excess street capacity or narrowing vehicle lane width. For example, in Portland, Oregon, the city upgraded the bicycle path on the Hawthorne Bridge, creating a physically separated bicycle path. Between 1991 and 2008, there was a 20% increase in the total number of vehicles (both automobiles and bicycles) using the span. However, there was only a 1% increase in the number of automobiles alone; thus, there was a significant increase in mobility with almost no increase in automobile congestion.

Many cities have also realized that they simply cannot continue to add automobile capacity and build their way out of congestion. The phenomenon of induced demand is well-documented: automobile capacity is added to relieve congestion, yet, within a relatively short timeframe, automobile congestion returns to its previous level (or worse) due to new trips induced by the additional capacity. Thus many cities are taking a total street capacity approach and looking to increase transit, walking, and bicycling within existing rights-of-way. This approach also appears to mirror changes in U.S. lifestyles as well, with per capita vehicle miles traveled dropping among certain age groups, fewer young people choosing to obtain drivers licenses, reduced automobile mode share, and increased bicycling, walking, and use of public transit (The Sightline Institute, Victoria Transport Policy Institute).

- **Economic improvements:** Numerous studies have shown a link between active transportation improvements and economic benefits. For instance, increased retail sales and sales tax revenue, increased private investments, decreased vacancy rates, increased property values, and faster property sales have been found. In Portland, Oregon, the economic benefits associated with bicycling include \$63 million in revenue and over 800 jobs (Portland Bureau of Transportation).

Many of these benefits have been realized at relatively little cost. Bicycle and pedestrian improvements often represent 1% or less of transportation budgets even in cities with relatively well-developed active transportation infrastructure (Portland Bureau of Transportation, New York City Department of Transportation).

While bicycling rates in U.S. cities are often low, numerous cities have increased rates dramatically with bicycle infrastructure improvements over time. Increasing rates of bicycling requires action beyond the status quo. Cities with cycling rates of 3% – 5% have taken fairly standard measures of adding conventional bicycle lanes, connecting off-street trails with on-street routes, adding bicycle racks, producing bicycle route maps, and promoting cycling. Cities that have realized rates over 5% have added protected bicycle lanes, created a connected and complete network of bicycle routes, tackled speeding, and dedicated street space to bicycling (League of American Bicyclists). Several U.S. cities now have bicycling rates over 5%, with significant upward growth trajectories. (And Europe has demonstrated that decades of bicycle improvements can take bicycling from very low rates to 25% and even 50%.)

Surveys have found that fully 2/3 of the population is interested in bicycling, if their concerns over safety can be addressed through good infrastructure development (Portland Bureau of Transportation). The largely untapped potential for this transportation mode is tremendous. In 2007, the Federal Highway Administration established the Non-motorized Transportation Pilot Program. The program provided over \$25 million to four communities (Columbia, MO; Marin County, CA; Minneapolis, MN; Sheboygan County, WI) to demonstrate how improved walking and bicycling networks can increase rates of walking and bicycling. From 2007 to 2010, mode share increases in the pilot communities to bicycling and walking and away from driving outpaced the 2001-2008 national average. For the three pilot communities, bicycle mode share increased 36%, walking mode share increased 14%, and driving mode share decreased 3% between 2007 and 2010 (Federal Highway Administration).

NEWARK MASTER BICYCLE ROUTE MAP

The map shown in Figure C1, Existing and Potential Bicycle Routes, serves as a master bicycle route map for the City. Developed as part of the Mobility Element, the routes shown are based on the following sources:

- **Newark Greenway Network Project Final Design Proposal by The RBA Group:** This document recommends a number of routes in central Newark and the Ironbound neighborhood.
- **Brick City Bike Collective:** This Newark bicycle advocacy organization has recommended a number of routes, also largely concentrated in central Newark and the Ironbound. Several of these routes are contiguous with those recommended by The RBA Group.
- **East Coast Greenway Alliance:** The East Coast Greenway, when fully realized, will run from Florida to Maine. The route through Newark, as shown in Figure B1, includes the existing, signed East Coast Greenway and also the potential route through the Ironbound (refer to the System Description section for further discussion).
- **Ice and Iron Trail Plan:** This proposed multi-use path would connect Montclair to Jersey City via northern Newark using the existing Norfolk Southern railroad right-of-way.
- **Newark Waterfront Walkway:** This multi-use path is planned for the Passaic River waterfront from Grafton Avenue in northern Newark to River Bank Park in the Ironbound.

The above recommended routes have been augmented by proposing most of the proposed routes outside of central Newark and the Ironbound. These were developed following bicycle planning best practices and judgment, based on the following:

- Extension of routes proposed by other sources, as listed above, to logical end points such as the City of Newark border, where streets end at a T-intersection, rivers or other geographic features, etc.
- The need for a dense, well-connected route network: Bicycle route connectivity – that is, the ability to bicycle from any logical origin and destination – is a critical factor in increasing bicycle mode share. If a potential bicyclist cannot conveniently, safely, and comfortably travel in a pattern more or less similar to that of motorists, he or she is less likely to choose to bicycle. Ideally, bicycle routes, just like streets, do not start and end in a haphazard fashion. Standard best practices for bicycle route planning recommend a route density of approximately one route per

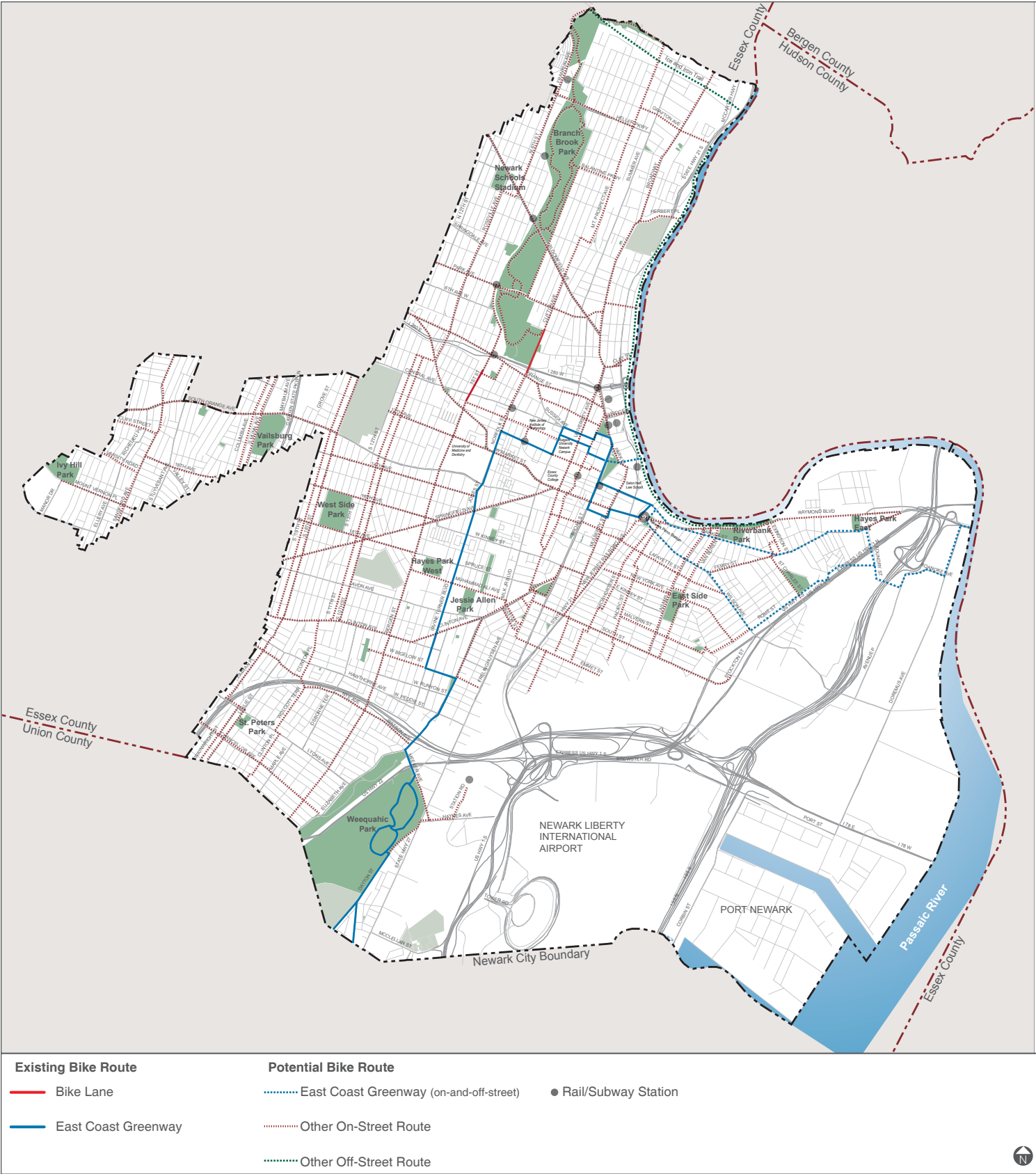


Figure C-1 - Newark Bicycle Routes, existing, under construction, & planned

½-mile in any direction, and that is the general approach taken here. (For instance, the City of Minneapolis, one of the most bike-friendly in the U.S., has a goal of spacing trails approximately two miles apart, bike lanes one mile apart, and local signed routes at ½-mile apart. The City of Chicago has a goal of “a safe and comfortable bicycle facility within ½-mile of every Chicagoan.” The City of Seattle goes even further, with plans for bicycle facilities within ¼-mile of 95% of residents.)

- **Avoidance of higher-volume/higher-speed arterials:** Many arterials have high traffic volumes and/or relatively high speed limits. Even with the presence of a bike lane on such streets, cyclists may feel uncomfortable or unsafe. Parallel routes with lower volumes/lower speeds were selected where possible. For instance, the University Avenue/Washington Street route seeks to avoid Broad Street. Similarly, west of Branch Brook Park, the Roseville Avenue route seeks to avoid N. 6th Street. These parallel routes can function as bicycle boulevards, also known as neighborhood greenways. Bicycle boulevards are typically quieter, low-traffic residential streets in which bicyclists share travel lanes with motorists; traffic calming or traffic diversion may be employed to further improve bicyclists' comfort on these routes.
- **Connections to transit:** Several routes were recommended to provide logical connections between the bicycle route network and Newark Light Rail stations. Bicycling can extend the catchment area of transit. For instance, rail passengers who walk to their stations typically are unwilling to walk more than ½-mile or 10 minutes to the station; thus, for those passengers who walk, the transit catchment area is approximately a ½-mile radius from the station. A ten-minute bicycle ride is roughly 1.5-mile (based on an average bicycling speed of 10 mph). Thus a transit catchment area that assumes some passengers will bicycle to the station includes a greater area and correspondingly larger pool of potential transit passengers. If routes to the station are safe and comfortable, with secure bicycle parking at the station, bicycling can be a convenient means of increasing transit ridership and increase cycling rates for the city. For example, many PATH riders bicycle to the Hoboken station, where bicycle parking is at a premium and was recently expanded.

It should be noted that the recommended potential routes shown are intended to guide future bike route implementation based on the methodology described above. However, actual implementation should be made based on field audits that assess the suitability of various streets for bicycle routes; street resurfacing, reconstruction, and streetscape projects; and other factors that change and evolve over time.

BICYCLE ROUTE TYPES

Bicycle routes are generally one of the following types:

- **Class I, protected bicycle path:** These routes consist of off-street greenways or multi-use paths, or protected on-street bicycle lanes (also known as cycle tracks). For instance, a portion of the route of the East Coast Greenway through Weequahic Park is a class-I route. The parking-protected route planned for a portion of Mt. Prospect Avenue is also a class-I route; in this case, the bicycle lane will be located between the curb and parallel-parked cars, with the parked cars providing protection to bicyclists from moving traffic. On-street protected routes are an important means of attracting bicyclists who may otherwise feel uncomfortable riding on-street.
- **Class II, bicycle lane:** These routes consist of standard bicycle lanes, as found on sections of 1st Street and Clifton Avenue. Class-II bicycle lanes may also be buffered, with a striped, hatched area separating the bicycle lane from the adjacent vehicle lane. This is the proposed design for a portion of Washington Street.
- **Class III, bicycle route:** Class-III routes do not include dedicated bicycle space. Bicyclists travel using the same lane as motorists, and the space is shared. They are often indicated by sharrows markings consisting of a bicycle symbol and double chevrons. Bicycle boulevards are also generally considered class-III routes.
- **Wide shoulder lane:** In areas where on-street parking is allowed but parking demand is infrequent with relatively few parked cars, the parking lane may be striped and also serve as a de facto bicycle lane. These routes are typically only recommended when a class-I or class-II route is not possible.

ROUTE IMPLEMENTATION

In order to realize the potential benefits associated with bicycling, Newark should establish a goal of implementing a certain number of route miles per year, a certain percentage of which are protected routes. For instance, the Chicago's Streets for Cycling 2020 plan calls for the development of 150 – 250 miles of bicycle facilities over the next eight years, including an unprecedented 100 miles of protected routes within four years; the remaining miles would largely consist of bicycle boulevards. In 1980, Portland, Oregon, had only six miles of bicycle facilities, by 2010 the city had 306 miles (and the bicycle mode share for commuting increased from approximately 1% to 6%). A review of cities of comparable size to Newark that have received bicycle friendly designations from the League of American Bicyclists would provide a logical baseline from which Newark can develop its goals.

All resurfacing/repaving projects should consider the addition of a bicycle route. While this approach does not result in a well-connected route system in the short-term, these projects are an opportunity to provide potentially robust bicycle facilities (such as class-I routes) and should be taken advantage of.

Problematic intersections or connections should be identified and addressed. For instance, bridges and arterial crossings of rivers and expressways that do not include bicycle facilities will deter potential cyclists who may not feel safe. A bicycle route that ends at a difficult expressway crossing or bridge is unlikely to attract many bicyclists.

Ideally, critical, central routes would be identified early and be the focus of early implementation efforts; subsequent routes can branch from these central spine routes. For instance, the East Coast Greenway route through south Newark coupled with the Norfolk Street/Clifton Avenue/Mt. Prospect Avenue corridor forms a logical central north-south route. Similarly, the South Orange Avenue/14th Avenue/Norfolk Street/Market Street corridor forms a logical central east-west route.

Following the implementation of central routes, subsequent routes should be implemented that branch from the more central routes and form a connected network. With the exception of routes resulting from resurfacing projects, routes that do not connect to other routes should generally be avoided.

Route design and configuration should be determined based on available right-of-way, costs, and vehicle volumes and speeds, with more robust facilities for higher volume/higher speed corridors to improve safety and comfort for the cyclist.

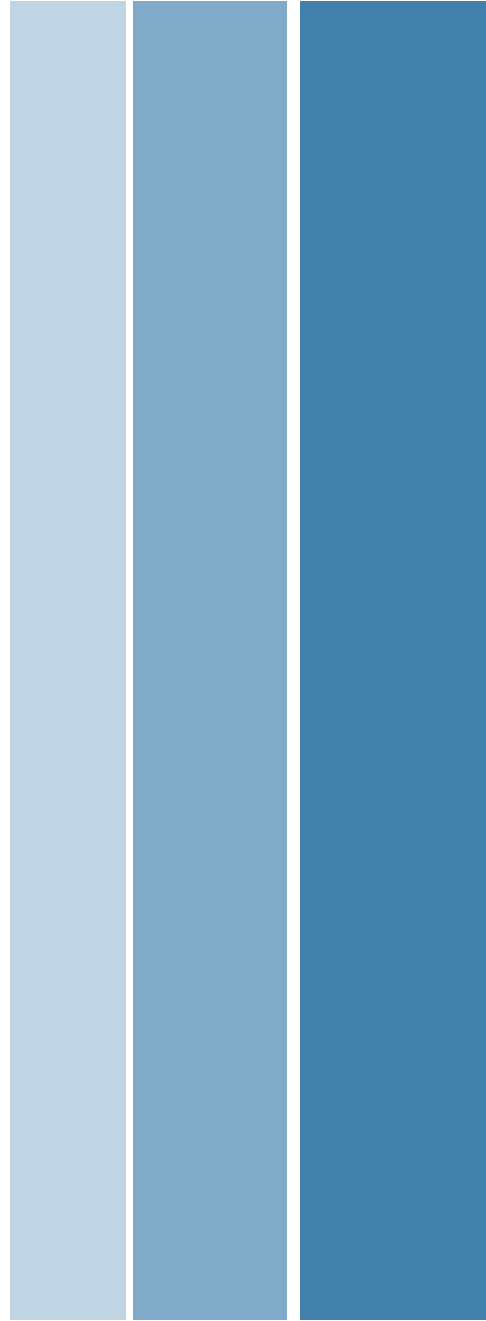
OTHER BICYCLE POLICIES AND PROGRAMS

In addition to bicycle route development, Newark should also consider the following:

- **Bicycle parking:** Safe and secure parking is critical to encouraging bicycling. Numerous cities have bike rack programs which install bike racks on a regular basis, often at the request of residents and business. Newark should also consider amending the zoning code to include bicycle parking requirements for new developments, at vehicle parking facilities, and transit stations.
- **Bike share:** Bike sharing programs have resulted in dramatic increases in ridership in many North American and European cities. For instance, New York City's Citi Bike will place 10,000 bicycles at 600 self-service stations, and in New Jersey, bike share programs are under consideration for Hoboken, Jersey City, and Red Bank.
- **Education:** Programs that teach bicyclists of all ages how to ride safely on multi-use paths and congested city streets and teach motorists how to share the road safely with bicyclists. There are a number of non-profit organizations that provide bicycle education classes throughout the northern New Jersey region.
- **Encouragement:** Good promotional measures are Bike Month and Bike to Work Week events, as well as community bike maps, route finding signage, community bike rides, commuter incentive programs, and having a Safe Routes to School and Safe Routes to Transit program.
- **Enforcement:** This includes the use of targeted law enforcement that encourages bicyclists and motorists to safely share the road, as well as bicycle related laws such as penalties for failing to yield to a cyclist while turning, penalties for motorists that "door" cyclists, and enforcement directed to bicyclists as part of a shared responsibility between the motorist and cyclist.

Appendix: Complete Streets Framework

D



Complete Streets Framework

New Jersey was the second state in the United States to adopt a Complete Streets policy and, according to the National Complete Streets Coalition, it is one of the strongest in the country. This policy, and the guidelines contained therein, is currently shaping the transportation projects being completed by the NJDOT and is a great resource to regional and local jurisdictions to encourage policy adoption at a municipal and county level. In April of 2012, Essex County adopted a Complete Streets policy and municipalities within the County have adopted policies of their own. It is time that Newark, as the largest municipality in the State that has one of the strongest complete streets policies in the country, adopt its own Complete Streets policy to shape the future of the roadways and public rights of way.

BACKGROUND AND DEFINITION

Complete Streets are streets that serve all users comfortably and safely, whether they are on foot, on a bike, in a car or a bus; whether they are able-bodied or have a disability; are young or elderly. How a street accommodates all users will look different based on the context and the needs of that street. For instance, some streets will need separate accommodations for all users while others can safely handle mixes of users; some will need on-street parking, such as on a commercial strip, while others have no reason for parked cars.

There are many tools available that can be used to achieve Complete Streets that will accommodate each type of user in different ways. The appropriate tool will depend on the context of the street in question. Context is a combination of the existing physical environment, the area and adjacent land uses, who is expected to use the street and how they need the street to function. In order to make bicyclists comfortable on a street with higher traffic volumes and speeds, a separated facility such as a bike lane or wide shoulder should be provided. However, on a lower-volume and lower-speed street, a bicyclist will likely feel comfortable sharing the road with vehicles. On streets where bicyclists are likely to be traveling but there is no room for separate or shared facilities, traffic calming recommendations to encourage a reduction in traffic speeds and/or volumes are recommended in order to make the street safe and comfortable for cyclists.

Complete Streets is more than the design of an individual street, however; it is a concept and a way of thinking of all transportation projects from project scoping, planning and design, construction, operations, and maintenance.

DEVELOPING A COMPLETE STREETS POLICY

The first step for the City of Newark in achieving Complete Streets is to develop a policy that supports mobility for all users of all ages and abilities to safely, conveniently, and comfortably access their destinations. The policy should be comprehensive in its wording with mention of applying Complete Streets in all stages of a transportation facility, including its design, operation, and maintenance.

The National Complete Streets Coalition (NCSC) is an excellent resource for developing a Complete Streets policy and garnering the tools to implement it. Guidance is offered on the NCSC website and is copied below:

An ideal Complete Streets policy:

- Includes a vision for how and why the community wants to complete its streets
- Specifies that 'all users' includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, buses and automobiles.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Encourages street connectivity and aims to create a comprehensive, integrated, connected network for all modes.
- Is adoptable by all agencies to cover all roads.
- Directs the use of the latest and best design criteria and guidelines while recognizing the need for flexibility in balancing user needs.
- Directs Complete Streets solutions to complement the context of the community.
- Establishes performance standards with measurable outcomes.
- Includes specific next steps for implementation of the policy

Attached to this document is a list of references of Complete Streets policies adopted by jurisdictions throughout the country put together by the NCSC. In addition, the 2009 NJDOT Complete Streets Policy and the 2010 City of Hoboken Complete Streets resolution are attached as examples.

GETTING FROM POLICY TO PRACTICE

Having a policy on the books is a critical step, but making sure that the policy is taking hold will require additional actions. The NCSC recommends four steps to making sure a Complete Streets policy translates into practical application and results in streets that work for everyone. The six steps are expounded upon here.

1. Reevaluate procedures, policies, and programs

An inventory of all procedures, policies and programs that pertain to Complete Streets should be conducted first. These may include project development forms; checklists for project scoping, roadway design, or maintenance operations; or basic operating procedures. Each document should be reviewed to ascertain whether it supports Complete Streets or needs to be modified in some way to allow for Complete Streets.

2. Reevaluate design manuals, standards, or guidelines

Again, the relevant design manuals will first need to be identified and reviewed to determine if any modifications should be made. This may include roadway design manuals, streetscape guidelines, or Americans with Disabilities Act (ADA) standards or guidelines. Some standards, such as the ADA standards, will be federally-driven, others may be mandated by state DOT policies, while others will be local.

Many existing design manuals were written with the intent of serving primarily the motor vehicle while other users are treated as an after-thought. However, as the Complete Streets concept is catching on in municipalities and states throughout the country, there are several great examples of comprehensive design manuals that have recently been developed that take all users into account:

- NJDOT and PennDOT Smart Transportation Guidebook, Planning and Designing Highways and Streets that Support Sustainable and Livable Communities
- MassDOT Project Development and Design Guide
- Charlotte Urban Street Design Guidelines (USDG)
- City of New Haven Complete Streets Design Manual

Each of these manuals is structured differently, but they are common in that they incorporate all transportation modes in the design considerations for roadways. Rather than approaching roadway design by functional classification, they each refer to street types, which are inherently more descriptive than functional classification. Charlotte's street types, for example, include main streets, avenues, boulevards, parkways, local residential streets, local office/commercial streets, and local industrial streets. The street types and needs of each street type are explained in the manual. One street may also take the characteristics of several different street types as it travels through areas with different contexts. Thus, different design standards may apply in segments where it's a commercial street versus where it travels through an industrial or a residential area. Considering just the functional classification, such as an arterial, would not capture the changing land uses and functions of the arterial segments.

As Complete Streets is dependent on the context of a roadway, it is important for design manuals or guidelines to allow for flexibility in design elements. For example, the MassDOT Project Development and Design Guide offers a range of lane widths and design speeds that are appropriate for the various roadway types. It also recommends that when higher traffic speeds are selected, roadway design improvements to protect pedestrians and bicyclists be implemented.

3. Create new performance measures

Historically, similar to design guidance, how a project or roadway gets evaluated often only focuses on the automobile. That, too, is changing. As communities want to accommodate and encourage travel by bike, foot, or transit, they are starting to pay attention to how well the transportation system serves these modes.

In roadway design, typically, the level of service (LOS) of a roadway is evaluated for the estimated number of vehicles using that road at some point in the future. LOS is a factor of the delay the vehicles experience on the roadway. One of the strategies to reduce the level of delay and increase LOS has been to add travel lanes. While it may improve service for the motorist, in theory, it degrades the experience for those on bikes or on foot. Thus, evaluating the roadway for vehicles only is becoming unacceptable. The current version of the Highway Capacity Manual includes a multi-modal level of service (MMLOS), which takes into account the quality of the roadway from a bicyclist's, pedestrian's, transit user's, and motorist's perspective.

There are additional ways to evaluate transportation projects and facilities. Evaluation criteria should be based on what is important to the community. Reduction of crashes or reduction of a certain type of crashes, such as cyclist and pedestrian crashes, is one example. Improvements to health or economic indicators is another example of evaluation criteria.

4. Offer training opportunities to planners and engineers

Finally, with all these elements in place, practitioners need to be aware of the new policies, processes, guidelines, and standards. Training will likely be needed for various levels of agencies, including department heads and managers, planning and engineering staff, construction and maintenance crews, and consultants who contract with the city.

PROJECT DEVELOPMENT PROCESS

The project development process is often outlined in the roadway design manual, but is discussed separately here. Public and stakeholder involvement is critical to the success of developing a roadway with Complete Streets in mind. It serves to get a better understanding of the people who travel the roadway, their mode choice, and the functionality of the street.. Outreach should begin early in the process and should be maintained throughout the project's life. Only when the needs of the community have been met has a Complete Street been achieved.

Again the Charlotte USDG is a good example of a project development process that supports establishing Complete Streets. Despite this being a transportation manual, the first step in Charlotte's process is to define the land use and urban design context. The remaining steps are listed below. The manual also recognizes that projects often do not take a linear track, but notes that the important thing is for each of these elements to be undertaken during the process.

1. Define Existing and Future Land Use and Urban Design Context
2. Define Existing and Future Transportation Context
3. Identify Deficiencies
4. Describe Future Objectives
5. Recommend Street Classification and Test Initial Cross-Sections
6. Describe Tradeoffs and Select Cross-Section

Again, it is important for users to be considered at each stage of the process and for the goals and objectives of the project to capture the needs of those who travel the transportation facility to reach their destinations.



Complete Streets Policies Examples

Policy	Level	Type	Language	Adoption Year	Source
Massachusetts Department of Transportation Project Development and Design Guide	State	design manual	"A guiding principle of the Guidebook is that the roadway system of the Commonwealth should safely accommodate all users of the public right-of-way including: pedestrians, (including people requiring mobility aids);... bicyclists; drivers and passengers of transit vehicles, trucks, automobiles and motorcycles."	2006	http://www.vhb.com/mhd/Guide/mhd_GuideBook.asp
Caltrans Deputy Directive 64-R1	State	internal policy	"...[P]rovides for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system."	2008	http://www.dot.ca.gov/hq/tp/offices/bike/guidelines_files/DD64.pdf
New Jersey Department of Transportation Complete Streets Policy	State	internal policy	"The New Jersey Department of Transportation shall implement a Complete Streets policy through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities..."	2009	http://www.completestreets.org/webdocs/policy/cs-nj-dotpolicy.pdf
North Carolina Department of Transportation Complete Streets Policy	State	internal policy	"Complete Streets is North Carolina's approach to interdependent, multi-modal transportation networks that safely accommodate access and travel for all users."	2009	https://apps.dot.state.nc.us/bio/releases/details.aspx?r=2777
State of Oregon ORS 366.514	State	legislation	"Footpaths and bicycle trails, including curb cuts or ramps as part of the project, shall be provided wherever a highway, road or street is being constructed, reconstructed or relocated."	1971	http://www.pdxtrans.org/bicycles/bikebill.htm
State of Florida Statute 335.065	State	legislation	"Bicycle and pedestrian ways shall be given full consideration in the planning and development of transportation facilities, including the incorporation of such ways into state, regional, and local transportation plans and programs. Bicycle and pedestrian ways shall be established in conjunction with the construction, reconstruction, or other change of any state transportation facility, and special emphasis shall be given to projects in or within 1 mile of an urban area."	1984	http://www.leg.state.fl.us/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App_mode=Display_Statute&Search_String=335.065&URL=CH0335/Sec065.HTM
Metropolitan Transportation Commission San Francisco Bay Area Regional Policy for the Accommodation of Non-Motorized Travelers	MPO	resolution	"Projects funded all or in part with regional funds (e.g. federal, STIP, bridge tolls) shall consider the accommodation of non-motorized travelers, as described in Caltrans Deputy Directive 64, to facilitate the accommodation of pedestrians, bicyclists, and disabled traveler needs into all projects where non-motorized travel is consistent with current, adopted regional and local plans."	2006	http://www.marinbike.org/Campaigns/CompleteStreets/MTCRes.pdf
East-West Gateway Council of Governments St. Louis Area Legacy 2030 Long-Range Plan	MPO	plan	"... [A]s a matter of standard practice the transportation system should be designed, built, and maintained in a manner that accommodates not only automobiles but transit vehicles and non-motorized modes of travel as well"	2007	http://www.ewgateway.org/pdf/files/library/trans/legacy2030/legacy2030-032105.pdf
Bloomington-Monroe County, IN MPO Complete Streets Policy	MPO	internal policy	"This policy will ensure that the entire right-of-way is designed and operated to enable safe access for all users and that all transportation agencies participating in the BMCMPPO adhere to implementing the principles of inclusion in all transportation projects appropriate to the local context and needs."	2009	http://bloomington.in.gov/media/media/application/pdf/4425.pdf
San Diego County, CA Transnet Tax Extension	County	tax ordinance	"All new projects, or major reconstruction projects, funded by revenues provided under this Ordinance shall accommodate travel by pedestrians and bicyclists, except where pedestrians and bicyclists are prohibited by law from using a given facility or where the costs of including bikeways and walkways would be excessively disproportionate to the need or probable use."	2004	http://www.sandag.org/uploads/committeed/committeed_75_5344.pdf
Ada County, ID Complete Streets Policy	County	resolution	"Streets, bridges and transit stops within Ada County should be designed, constructed, operated and maintained so that pedestrians, bicyclists, transit riders, motorists, and people of all ages and abilities can travel safely and independently."	2009	http://www.achd.ada.id.us/PDF/staff_reports/2009/052709/6.pdf

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Complete Streets Policies Examples

Policy	Level	Type	Language	Adoption Year	Source
Sacramento, CA Best Practices Guide	City	best practices	"This document outlines an approach to designing streets that are more "complete" in the sense of accomplishing all of the goals associated with the dominant form of public space in urban societies – our streets. ... Complete streets are those that adequately provide for all roadway users, including bicyclists, pedestrians, transit riders, and motorists, to the extent appropriate to the function and context of the street."	2005	http://www.cityofsacramento.org/transportation/dot_media/engineer_media/pdf/bp-UniversalDesign.pdf
San Francisco, CA Transit First policy	City	legislation	"Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights of way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety."	1995	http://library.municode.com/HTML/14130/level1/AVIIIA.html#AVIIIA_S8A.115
Hendersonville, TN Transportation & Land Use Plan	City	plan	"The inclusion of complete streets in the Hendersonville Land Use & Transportation Plan is a response to a public interest. Local citizens, business owners, and officials recognize the importance of a shift from an automobile-dominated roadway to a balanced, multi-modal transportation system that respects all users of the roadway and the rights of adjacent land owners."	2009	http://www.hvilletn.org/comprehensiveplan.aspx
Colorado Springs, CO Amendment to the Intermodal Transportation Plan	City	plan amendment	"Construct complete streets designed to accommodate all users. In all new roadway projects or major reconstruction projects, accommodate travel by pedestrians, bicyclists, and transit users, except where pedestrians and bicyclists are prohibited by law from using a given facility or where... unsafe or impractical."	2005	http://www.springsgov.com/units/council/051122/051122_40.pdf
Rockville, MD Complete Streets Policy	City	internal policy	"The Complete Streets policy of the City of Rockville is developed to provide guidance for its residents, decision makers, planners and designers to ensure that multimodal elements are incorporated into all transportation improvement projects."	2009	http://www.rockvillemd.gov/residents/traffic/pdf/complete_streets_policy_adoption.pdf
Charlotte, NC Urban Street Design Guidelines	City	internal policy	"The Guidelines will allow us to... provide more capacity and safe and comfortable travel for motorists, pedestrians, bicyclists, and transit riders." Establishes a new six-step planning process that begins by assessing all user needs.	2007	http://www.charmeck.org/Departments/Transportation/Urban+Street+Design+Guidelines.htm
North Myrtle Beach, SC Complete Streets Ordinance	City	ordinance	"All streets shall be designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street."	2009	http://www.completestreets.org/webdocs/policy/cs-sc-northmyrtlebeach-ordinance.pdf
Rochester, MN Complete Streets Policy	City	ordinance	"The City of Rochester will seek to enhance the safety, access, convenience and comfort of all users of all ages and abilities, including pedestrians (including people requiring mobility aids), bicyclists, transit users, motorists and freight drivers, through the design, operation and maintenance of the transportation network so as to create a connected network of facilities..."	2009	http://www.co.olinsted.mn.us/departments/planning/transportation_planning.aspx
Decatur, GA Community Transportation Plan	City	plan	"...CTP employs a Complete Streets philosophy that defines the street by more than just its mobility and accessibility functions, but by its role as a critical community character shaper."	2008	http://www.decaturga.com/gis_citysvcs_dev_transportationplan.aspx
DeSoto, MO Bill No. 45-08	City	ordinance	"The City of De Soto establishes a "policy statement" to ensure that the City will design, build and maintain its roadways in a manner that accommodates safe and contiguous routes for all users including pedestrians, individuals of all ages and abilities (including individuals with disabilities), bicyclists, transit vehicles and users and motorists."	2008	http://www.completestreets.org/webdocs/policy/cs-mo-desoto-ordinance.pdf
Las Cruces, NM Resolution No. 09-0058R1	City	resolution	"Every public right-of-way shall be planned, designed, constructed, and maintained such as that each Las Cruces will have transportation options to safely and conveniently travel to their destinations."	2009	http://empoweb.las-cruces.org/Complete%20Streets/City%20Policy%20as%20Cruces%20Complete%20Streets%20Resolution.pdf
Seattle, WA Complete Streets Ordinance	City	ordinance	"...[S]o that transportation improvements are planned, designed and constructed to encourage walking, bicycling, and transit use while promoting safe operations for all users."	2007	http://clerk.ci.seattle.wa.us/~scripts/nph-brs.exe?id=CBOR&i=115861.ctn.&sect6=HITOFF&i=20&p=1&u=/public/cbor2.htm&r=1&f=G

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DEPARTMENT OF TRANSPORTATION POLICY

Policy No. 703
Supersedes: 703 dated
8/7/89

Page 1 of 3

SUBJECT: Complete Streets Policy	Effective Date:	Commissioner Approval: Sponsor Approval: Robert Miller Contact Telephone #: 530-3855
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I. PURPOSE

To create and implement a Complete Streets Policy in New Jersey through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities within public rights of way that are federally or state funded, including projects processed or administered through the Department's Capital Program.

II. DEFINITIONS

A Complete Street is defined as means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.

III. BACKGROUND

The benefits of Complete Streets are many and varied:

- Complete Streets improve safety for pedestrians, bicyclists, children, older citizens, non-drivers and the mobility challenged as well as those that cannot afford a car or choose to live car free.
- Provide connections to bicycling and walking trip generators such as employment, education, residential, recreation, retail centers and public facilities.
- Promote healthy lifestyles.
- Create more livable communities.
- Reduce traffic congestion and reliance on carbon fuels thereby reducing greenhouse gas emissions.
- Complete Streets make fiscal sense by incorporating sidewalks, bike lanes, safe crossings and transit amenities into the initial design of a project, thus sparing the expense of retrofits later.

IV. POLICY

The New Jersey Department of Transportation shall implement a Complete Streets policy through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities, enabling safe access and mobility of pedestrians, bicyclists, transit users of all ages and abilities. This includes all projects funded through the Department's Capital Program. The Department strongly encourages the adoption of similar policies by regional and local jurisdictions who apply for funding through Local Aid programs.

**DEPARTMENT OF TRANSPORTATION
POLICY**

Policy No. 703

Page 2 of 3

SUBJECT: NJDOT Complete Streets Policy

Effective Date:

1. Create a comprehensive, integrated, connected multi-modal network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers.
2. Provide safe and accessible accommodations for existing and future pedestrian, bicycle and transit facilities.
3. Establish a checklist of pedestrian, bicycle and transit accommodations such as accessible sidewalks curb ramps, crosswalks, countdown pedestrian signals, signs, median refuges, curb extensions, pedestrian scale lighting, bike lanes, shoulders and bus shelters with the presumption that they shall be included in each project unless supporting documentation against inclusion is provided and found to be justifiable.
4. Additionally, in rural areas, paved shoulders or a multi-use path shall be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders provide safety and operational advantages for all road users. Shoulder rumble strips are not recommended when used by bicyclists, unless there is a minimum clear path of four feet in which a bicycle may safely operate. If there is evidence of heavy pedestrian usage then sidewalks shall be considered in the project.
5. Establish a procedure to evaluate resurfacing projects for complete streets inclusion according to length of project, local support, environmental constraints, right-of-way limitations, funding resources and bicycle and/or pedestrian compatibility.
6. Transportation facilities are long-term investments that shall anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements.
7. Address the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections, interchanges and bridges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.
8. Design bicycle and pedestrian facilities to the best currently available standards and practices including the New Jersey Roadway Design Manual, the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities, the Manual of Uniform Traffic Control Devices and others as related.

**DEPARTMENT OF TRANSPORTATION
POLICY**

Policy No. 703

Page 3 of 3

SUBJECT: NJDOT Complete Streets Policy

Effective Date:

9. Research, develop and support new technologies in improving safety and mobility.
10. Make provisions for pedestrians and bicyclists when closing roads, bridges or sidewalks for construction projects as outlined in NJDOT Policy #705 – Accommodating Pedestrian and Bicycle Traffic During Construction.
11. Improvements should also consider connections for Safe Routes to Schools, Safe Routes to Transit, Transit Villages, trail crossings and areas or population groups with limited transportation options.
12. Establish an incentive within the Local Aid Program for municipalities and counties to develop and implement a Complete Streets policy.
13. Improvements must comply with Title VI/Environmental Justice, Americans with Disabilities Act (ADA) and should complement the context of the surrounding community.
14. Implement training for Engineers and Planners on Bicycle/Pedestrian/Transit policies and integration of non-motorized travel options into transportation systems.
15. Establish Performance Measures to gauge success.

V. EXEMPTIONS

Exemptions to the Complete Streets policy must be presented for final decision to the Capital Program Screening Committee in writing by the appropriate Assistant Commissioner and documented with supporting data that indicates the reason for the decision and are limited to the following:

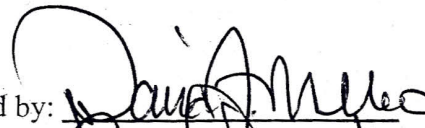
- 1) Non-motorized users are prohibited on the roadway.
- 2) Scarcity of population, travel and attractors, both existing and future, indicate an absence of need for such accommodations.
- 3) Detrimental environmental or social impacts outweigh the need for these accommodations.
- 4) Cost of accommodations is excessively disproportionate to cost of project, more than twenty percent (20%) of total cost.
- 5) The safety or timing of a project is compromised by the inclusion of Complete Streets.

An exemption other than those listed above must be documented with supporting data and must be approved by the Capital Program Committee along with written approval by the Commissioner of Transportation.

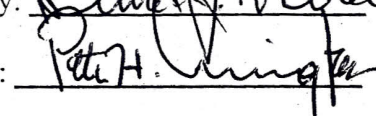
VI. AUTHORITY

N.J.S.A. Title 27

Introduced by:



Seconded by:



**CITY OF HOBOKEN
RESOLUTION NO. : _____**

CITY OF HOBOKEN

A RESOLUTION TO ESTABLISH A COMPLETE STREETS POLICY

WHEREAS, "Complete Streets" are defined as roadways that enable safe and convenient access for all users, including bicyclists, children, persons with disabilities, motorists, seniors, movers of commercial goods, pedestrians, and users of public transport; and,

WHEREAS, significant accomplishments have already been achieved by incorporating pedestrian safety and traffic calming measures when public streets are improved; and,

WHEREAS, the New Jersey Department of Transportation supports complete streets policies and adopted its own such policy on 3 December, 2009; and,

WHEREAS, Complete Streets are supported by the Institute of Traffic Engineers, the American Planning Association, Hudson County Division of Planning, and many other transportation, planning, and public health officials; and,

WHEREAS, Complete Streets policies support the goals of the City of Hoboken Master Plan; and,

WHEREAS, promoting pedestrian, bicycle, and public transportation travel as an alternative to the automobile reduces negative environmental impacts, promotes healthy living, and is less costly to the commuter; and

WHEREAS, the design and construction of new roads and facilities should anticipate future demand for biking, walking, and other alternative transportation facilities and not preclude the provision of future improvements; and,

WHEREAS, the full integration of all modes of travel in the design of streets and highways will increase the capacity and efficiency of the road network, reduce traffic congestion by improving mobility options, limit greenhouse gases, improve air quality, and enhance the general quality of life.

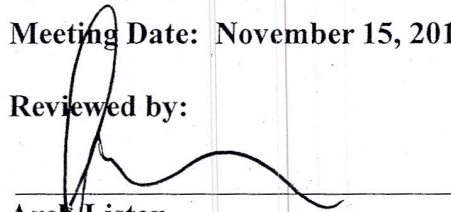
NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Hoboken that all public street projects, both new construction and reconstruction (excluding maintenance) undertaken by the City of Hoboken shall be designed and constructed as "Complete Streets" whenever feasible to do so in order to safely accommodate travel by pedestrians, bicyclists,

public transit, and motorized vehicles and their passengers, with special priority given to pedestrian safety, and subject to the following conditions:

- a. Pedestrian and bicycle facilities shall not be required where they are prohibited by law.
- b. Public transit facilities shall not be required on streets not serving as transit routes and the desirability of transit facilities will be determined on a project specific basis.
- c. In any project, should the cost of pedestrian, public transit, and/or bicycle facilities cause an increase in project costs in excess of 15%, as determined by engineering estimates, that would have to be funded with local tax dollars, then and in that event approval by Council must be obtained for same prior to bidding of the project.
- d. Significant adverse environmental impacts outweigh the positive effects of the infrastructure

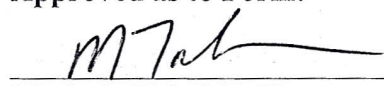
Meeting Date: November 15, 2010

Reviewed by:



Arch Liston
Business Administrator

Approved as to Form:



Mark A. Tabakin, Esq.
Corporation Counsel

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Mobility Element
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Mobility Element

Newark Master Plan

June 2012

Prepared for:

City of Newark, New Jersey



In Collaboration with:



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Prepared by:

Sam Schwartz Engineering 

in conjunction with:

PB Americas, Inc.

Vanasse Hangen Brustlin, Inc.

Technique Corporation